

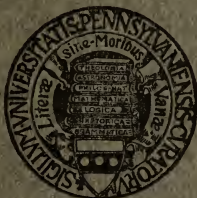
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University of Pennsylvania Bulletin

Philadelphia, Pa., January 1, 1920

Volume XX, No. 7

SCHOOL OF MEDICINE (1919-1920)



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UNIVERSITY OF PENNSYLVANIA

Announcement for the 155th Annual Session 1920-1921

Published Semi-Monthly by the University

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SPECIAL NOTICE.

Copies of the University Catalogue (containing detailed information concerning all the Schools) may be obtained ONLY upon application to the Secretary of the University of Pennsylvania, Philadelphia, Pa.

To any alumnus of the University, the Catalogue will be sent upon application on receipt of name, class and address.

The special announcement of the following divisions of the University will be sent upon application to the appropriate Dean:

THE COLLEGE, including
THE SCHOOL OF ARTS.
THE SUMMER SCHOOL.
THE COLLEGE COURSES FOR TEACHERS.
THE TOWNE SCIENTIFIC SCHOOL.
THE WHARTON SCHOOL.
THE SCHOOL OF EDUCATION.
THE GRADUATE SCHOOL.
THE LAW SCHOOL.
THE SCHOOL OF MEDICINE.
THE SCHOOL OF DENTISTRY.
THE SCHOOL OF VETERINARY MEDICINE.
THE GRADUATE SCHOOL OF MEDICINE.

Entered at the Philadelphia, Pa., Post Office as Second-Class Matter.

UNIVERSITY OF PENNSYLVANIA

SCHOOL OF MEDICINE

(1919-1920)

Announcement for the 155th Annual Session

1920-1921



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PHILADELPHIA

PRINTED FOR THE UNIVERSITY

FEBRUARY, 1920

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THE UNIVERSITY.

General Information.

LOCATION.

The buildings of the University of Pennsylvania are situated in Philadelphia, on property covering an area of over fifty-nine acres. In addition to this land the University has recently acquired from the city an adjoining tract comprising fifty-five acres, more or less. The University may be reached from the various railroad stations as follows: From the West Philadelphia Station of the Pennsylvania Railroad, on foot west on Woodland Avenue, a walk of less than ten minutes; from the Philadelphia and Reading Terminal Station by the electric subway, west to Thirty-second Street, thence on foot west on Woodland Avenue; or from the Baltimore and Ohio Railroad Station by a walk of one square south to Walnut Street, thence by car over the bridge west to Thirty-fourth Street.

APPLICATIONS FOR CATALOGUES, ETC.

Applications for copies of the annual University Catalogue should be addressed to the Secretary of the University of Pennsylvania, Philadelphia, Pa.

The University also issues announcements relating to the College and the several Schools or to individual Departments and often containing information not found in the catalogue. Inquirers interested in special branches of work only, are advised to apply for these announcements, not for the Catalogue.

All letters of inquiry regarding the internal regulations and requirements in the College or each separate School of the University should be addressed to the Dean of that section (see *Administrative Officers*, following), and *not* to the Secretary of the University.

ACCOMMODATIONS FOR STUDENTS.

Lodging for students to the number of more than eight hundred is provided in the present dormitory system, which comprises an extended group of continuous houses fronting upon three open courts. Plans of the dormitories, prices, and other details may be obtained upon application to the Bursar of the University, College Hall.

GENERAL INFORMATION.

Board and lodging may be obtained also in the immediate vicinity of the University. Upon application at the offices of the Bursar, College Hall, lists of approved boarding houses may be seen.

HOUSTON HALL.

Houston Hall is the home of the Houston Club, to membership in which any member of the University is eligible. The fee for active membership in the club is \$3.00 per annum (included in the fifteen dollar Gymnasium, Houston Club and Athletic fee paid by all male undergraduates).

Its purposes are to provide for the students a place where all may meet socially on common ground, and to furnish every available facility for healthy recreation and amusement in leisure hours. The equipment of the Hall includes a reading-room, with a large number of periodicals and newspapers; smoking-rooms, billiard and pool tables, tables for chess and checkers, a correspondence room; athletic trophy rooms; a large auditorium with grand organ; rooms for the University papers and other organizations; and other rooms for general purposes.

The Christian Association, which has its headquarters in Houston Hall, is prepared to furnish prospective students, through its Secretary, full information with regard to the various undergraduate social activities, both secular and religious.

A Students' Employment Bureau is affiliated with the Christian Association: address Director, Houston Hall.

UNIVERSITY OF PENNSYLVANIA.

CHRONOLOGICAL TABLE.

- 1740—"Charity School" founded.
1749—The "Academy" established, with which the Charity School was combined.
1753—Charter granted by Thomas and Richard Penn, incorporating "The Academy and Charitable School."
1755—"Confirmatory Charter" granted by Thomas and Richard Penn, incorporating "The College, Academy and Charitable School."
1765—School of Medicine founded.

From September, 1777, to June, 1778, owing to the occupation of Philadelphia by British troops, recitations and lectures were suspended.

- 1779—Withdrawal of the chartered rights and privileges of The College by the State Assembly, and incorporation of the "University of the State of Pennsylvania."
1789—Restoration of its chartered rights and privileges to The College.
1790—Law School founded (re-established in 1850).
1791—Union of the University of the State of Pennsylvania with The College, under the title of the UNIVERSITY OF PENNSYLVANIA.
1874—University Hospital established.
1875—Towne Scientific School founded.
1877—Department of Music established.
1878—School of Dentistry founded.
1881—Wharton School of Finance and Commerce founded.
1882—Graduate School founded.
1884—Veterinary School founded.
1885—Veterinary Hospital established.
1885—Department of Physical Education established.
1889—Department of Archæology established.
1892—Laboratory of Hygiene established.

- 1892—Wistar Institute of Anatomy and Biology established.
- 1892—Saturday Courses for Teachers established.
- 1896—Houston Club organized.
- 1896—Flower Astronomical Observatory opened.
- 1904—Summer School (College) established.
- 1906—College Courses for Teachers established.
- 1910—Henry Phipps Institute transferred to the University.
- 1912—Division of the College into three departments—The College, the Towne Scientific School and the Wharton School.
- 1914—School of Education established.
- 1916—Merger with Medico-Chirurgical College of Philadelphia and establishment of the Medico-Chirurgical College Graduate School of Medicine of the University of Pennsylvania.
- 1918—The Philadelphia Polyclinic and College for Graduates in Medicine merged with the Graduate School of Medicine and formed the Polyclinic Section.

ADMINISTRATIVE OFFICERS.

OF THE CORPORATION.

Provost—EDGAR F. SMITH, PH.D., SC.D., L.H.D., LL.D.

Office in the John Harrison Laboratory of Chemistry, Thirty-fourth and Spruce streets.

Vice-Provost—JOSIAH H. PENNNIMAN, PH.D., LL.D.

Office, 104 College Hall.

Secretary—EDWARD W. MUMFORD, PH.B.

Office, 4037 Pine Street.

Treasurer—F. CORLIES MORGAN, A.B.

Office, 4037 Pine Street.

Assistant Treasurer—R. L. S. DOGETT.

Office, 4037 Pine Street.

Recorder—GEORGE E. NITZSCHE, LL.B.

Office, Houston Hall.

Comptroller—WILLIAM O. MILLER, A.B.

Office, 4037 Pine Street.

Bursar—HORACE R. BARNES.

Office, 102 College Hall. Office hours, 9 A. M. to 5 P. M., daily.

The Bursar's office is open from 8.45 A. M. to 5 P. M. Saturdays, 8.45 A. M. to 1 P. M.

Publicity Agent—EDWARD R. BUSHNELL, A.B., B.S.

Office, Logan Hall.

DEANS OF THE FACULTIES.

Dean of the College Faculty—ARTHUR HOBSON QUINN, PH.D., LITT.D.

Office, 103 College Hall, Woodland Avenue. Office hours, 9 A. M. to 12 M. daily.

Dean of the Towne Scientific School Faculty—JOHN FRAZER, A.M., PH.D.

Office, Engineering Building. Office hours, 9 A. M. to 12 M., and 3 P. M. to 4 P. M. daily.

Dean of the Wharton School Faculty—EMORY R. JOHNSON, PH.D.

Office, Logan Hall, Thirty-sixth Street below Woodland Avenue.

Dean of the School of Education—FRANK P. GRAVES, PH.D., LITT.D., LL.D.

Office, 108 College Hall. Office hours, 11 A. M. to 12 M., and 4 to 5 P. M. daily, except Friday and Saturday.

Dean of the Graduate School Faculty—HERMAN V. AMES, A.M., PH.D.

Office, 105 College Hall, Woodland Avenue. Office hours, 9 A. M. to 12 M. daily.

Dean of the Law Faculty—WM. E. MIKELL, B.S., LL.M.

Office in the Law School Building, Thirty-fourth and Chestnut streets. Office hours, Wednesdays, Thursdays and Fridays, 12 to 1 P. M.; Mondays and Tuesdays, 12.15 to 1 P. M.

Dean of the Medical Faculty—WILLIAM PEPPER, A.B., M.D.

The Dean's Office (in the Medical Laboratories, Hamilton Walk) is open from 9 A. M. to 5 P. M.; Saturdays, 9 A. M. to 1 P. M.

Dean of the Graduate School of Medicine—GEORGE H. MEEKER, PH.D., Sc.D., LL.D.

The Dean's Office (in the Polyclinic Hospital, Eighteenth and Lombard streets) is open from 9 A. M. to 5 P. M.; Saturday, 9 A. M. to 1 P. M.

Dean of the Dental Faculty—CHARLES R. TURNER, D.D.S., M.D.

Office, Thomas W. Evans Dental Institute, Fortieth and Spruce streets. Office hours, 9 A. M. to 1 P. M. daily.

Dean of the Faculty of Veterinary Medicine—LOUIS A. KLEIN, V.M.D.

Office, Veterinary Building, Thirty-ninth Street and Woodland Avenue. Office open daily from 9 A. M. to 5 P. M., except Saturday; on Saturday, 9 A. M. to 1 P. M.

OF THE DEPARTMENT OF PHYSICAL EDUCATION.

Director—R. TAIT MCKENZIE, A.B., M.D.

Office in the Gymnasium, Thirty-third and Spruce streets. Office hours, 3 P. M. to 6 P. M., daily, except Saturdays.

Students' Physicians—The Trustees have appointed the following to act as student physicians: JOHN H. MUSSER, JR., M.D., Medical Consultant: ALEXANDER RANDALL, M.D., Surgical Consultant. Physicians: GEORGE WILSON, M.D., J. A. SMITH, M.D., A. W. PHILLIPS, M.D.

OF OTHER DEPARTMENTS.

Director of Admissions—GEORGE GAILEY CHAMBERS, PH.D.

(For the College, Towne Scientific School, Wharton School and School of Education.)

Office, Room 113, College Hall.

Assistant Directors—GEORGE WILLIAM MCCLELLAND, A.M., PH.D.,
FREDERIC W. BREIMEJR, A.M.

Librarian of the University—ASA D. DICKINSON.

Office in the Library, Thirty-fourth Street below Walnut.

Assistant Librarian—KATHARINE S. LEIPER.

The Library is open daily during term-time (except holidays) from 8.15 A. M. to 10 P. M.; Sundays from 2 P. M. to 6 P. M. During the summer vacation daily (except Sundays and holidays) from 9 A. M. to 5 P. M.; during the session of the Summer School, daily (except holidays) from 8.30 A. M. to 10 P. M.; Sundays from 2 P. M. to 6 P. M.

Librarian of the Biddle Law Library—MRS. MARGARET C. KLINGELSMITH, LL.B., LL.M.

Office in the Law School Building, Thirty-fourth and Chestnut streets. Office hours, 10 A. M. to 5 P. M., daily.

Director of the Summer School—HENRY LAMAR CROSBY, PH.D.

Office, 109 College Hall.

Superintendent of the University Hospital—MARION E. SMITH.

The Hospital is on Spruce Street above Thirty-fourth. Communications concerning the Hospital and the admission of patients should be addressed to the Superintendent.

Director of the William Pepper Clinical Laboratory—HERBERT FOX, M.D.

Office in the Laboratory. Office hours, 2 P. M. to 3 P. M., daily.

The Laboratory is on Spruce Street below Thirty-sixth, adjoining the Hospital.

Director of the Wistar Institute—MILTON J. GREENMAN, PH.B., M.D., Sc.D.

Office in the Institute, Thirty-sixth Street and Woodland Avenue. Office hours, 3 to 5 P. M., daily, except Saturdays.

Director of the John Harrison Laboratory of Chemistry—EDGAR F. SMITH, PH.D., CHEM.D., Sc.D., L.H.D., LL.D.

Office in the Laboratory, Thirty-fourth and Spruce streets.

Director of the Laboratory of Hygiene—ALEXANDER C. ABBOTT, M.D., DR.P.H., Sc.D.

Office in the Laboratory, Thirty-fourth Street below Walnut.

First Assistant in the Laboratory of Hygiene—DAVID HENDRICKS BERGEY, A.M., M.D., DR.P.H.

Office in the Laboratory. Office hours, 9 A. M. to 12 M., and 2 P. M. to 5 P. M., daily.

Director of the Randal Morgan Laboratory of Physics—ARTHUR W. GOODSPEED, PH.D.

Office in the Laboratory, Thirty-fourth Street below Walnut.

Director of the Psychological Laboratory and Clinic—LIGHTNER WITMER, PH.D.

Office in the Laboratory, College Hall.

Director of the Light and Heat Station—SAMUEL B. LOCKE.

Superintendent of Buildings and Grounds—WILLIAM R. JONES, M.E.

Office, Room 323, Engineering Building.

Director of the Zoölogical Laboratory—CLARENCE E. MCCLUNG, PH.G., A.M., PH.D.

The Laboratory is on Hamilton Walk.

Director of the Robert Hare Chemical Laboratory—JOHN MARSHALL, M.D., NAT.SC.D., LL.D.

Director of the Botanic Garden—JOHN M. MACFARLANE, D.Sc.

The Garden is adjacent to the Botanical Laboratory, on Hamilton Walk, and is open daily from 7 A. M. to sunset. The greenhouses are open from 8 A. M. to 5 P. M.

Director of the Flower Astronomical Observatory—ERIC DOOLITTLE, C.E.

The Observatory is situated at Highland Park Station, one mile beyond the Sixty-ninth Street Terminal Station of the Market Street elevated electric road.

Purchasing Agent—BOULTON EARNSHAW.

Office, Room 320, Zoölogical Laboratory, Office hours, 9 A. M. to 4.30 P. M.

HENRY PHIPPS INSTITUTE.

Executive Director—CHARLES J. HATFIELD, M.D.

Director of the Clinical and Sociological Department—H. R. M. LANDIS, M.D.

Director of the Laboratory—PAUL A. LEWIS, M.D.

UNIVERSITY MUSEUM.

The Museum contains the archæological and ethnological collections of the University, and is situated on Spruce Street below Thirty-fourth, opposite Franklin Field. The collections are open to visitors daily from 10 A. M. to 5 P. M.; on Sundays, from 2 P. M. to 6 P. M. Director, GEORGE B. GORDON, Sc.D.

UNIVERSITY OF PENNSYLVANIA CABLE ADDRESS:

"Sylpenn," Philadelphia.

SCHOOL OF MEDICINE.*

On September 24, 1920, the 155th annual session of the School of Medicine will be opened, to continue until June 15, 1921, when the annual commencement exercises for the term will be held:

This venerable institution, the oldest Medical School in the United States, was founded in 1765 by DR. JOHN MORGAN, who filled in it the first medical professorship created in America. In his opening "Discourse upon the Institution of Medical Schools in America," delivered in the College of Philadelphia, May 30, 1765, DR. MORGAN uttered these prophetic words: "Perhaps this medical institution, the first of its kind in America, though small in its beginning, may receive a constant increase of strength, and annually exert new vigor. It may collect a number of young persons, of more than ordinary abilities, and so improve their knowledge as to spread its reputation to distant parts. By sending these abroad duly qualified, or by exciting an emulation amongst men of parts and literature, it may give birth to other useful institutions of a similar nature, or occasional rise, by its example, to numerous societies of different kinds, calculated to spread the light of knowledge through the whole American continent, wherever inhabited."

Through DR. MORGAN, the pupil of HUNTER in London and of CULLEN in Edinburgh, the graduates of this school take a just pride in regarding it as the lineal descendant of the best medical schools of Great Britain in the eighteenth century. To DR. MORGAN was soon joined another pupil of CULLEN, DR. WILLIAM SHIPPEN, as Professor of Anatomy and Surgery, thus forming another tie of relationship to the celebrated University of Edinburgh, methods of instruction in which were substantially adopted here. In the next year DR. ADAM KUHN was added as a Professor of Botany and Materia Medica; and on June 21, 1768, a Commencement was held at which medical honors were bestowed, the first in point of time in America. In 1769, DR. BENJAMIN RUSH was elected to the Professorship of Chemistry, while DR. THOMAS BOND, one of the trustees of the College of Philadelphia, delivered lectures on Clinical Medicine in the Pennsylvania Hospital.

*The authorities of the school reserve the right to make such modifications in connection with the announcements embodied in this catalogue as may from time to time be required or deemed wise without the formality of further notice.

To the faculty thus composed of MORGAN, SHIPPEN, KUHN and RUSH have succeeded, at various times, professors whose reputations have been national, as WOODHOUSE, BARTON, WISTAR, CHAPMAN, PHYSICK, DEWEES, HORNER, HARE, GEORGE B. WOOD, HODGE, FRANCIS GURNEY SMITH, HENRY H. SMITH, LEIDY, AGNEW, GOODELL, PEPPER, STILLE, R. A. F. PENROSE, H. C. WOOD, ASHHURST, NORRIS, TYSON, DUHRING and WHITE.

The Medical School has been housed during the past century and a half in various buildings, the first, known as Anatomical or Surgeon's Hall, was located on Fifth Street above Walnut. Later the University having purchased, in 1802, the house erected for George Washington on Ninth Street, where the present United States Post Office is located, the Medical School occupied an addition to the building. This, in 1818, was rebuilt and considerably enlarged. In 1829 the "Presidential Mansion" was torn down and two buildings were erected—one for the College and the other for the Medical School. In 1873 the University moved to its present location in West Philadelphia adjoining the grounds of the Philadelphia General Hospital or Blockley. Medical Hall and the University Hospital were erected on the campus at that time. The Hospital was the first in this country to be built for the use of a Medical School. The Staff has from the beginning consisted solely of members of the faculty and the medical students for the last forty years have received most of their medical and surgical training in its wards and dispensaries.

In 1892 the Laboratory of Hygiene was built and in 1904 a new building was erected to accommodate the Laboratories of Pathology, Physiology and Pharmacology. Medical Hall was shortly thereafter vacated. The Robert Hare Laboratory of Chemistry, erected in 1877 and at one time the home of the Dental School, now houses the General Chemical Laboratories of the School of Medicine, the Laboratory of Physiological Chemistry and on the top floor the Dissecting Room.

The two-year course of instruction was changed in 1877 to three years and in 1893 to four years. In 1909, in addition to graduation from high school, one year's college work with courses in Physics, Biology and Chemistry was required for admission to the Medical School. In 1910 this was raised to two years of college work.

With the foundation of the John Rhea Barton Professorship of Surgery in 1878 the first endowed chair in a Medical School in this country was created.

The Wistar Institute of Anatomy and Biology, incorporated in 1892, was the first American University Institute devoted to advanced study and research in Anatomy and Biology.

In 1894 the William Pepper Laboratory of Clinical Medicine was erected adjoining the University Hospital, the purpose of this Laboratory being to promote the interests of the patients by providing facilities for the prosecution of minute clinical studies and original researches. This was the first Clinical Laboratory in a separate building of its own to be erected in this country.

The Henry Phipps Institute for the study, treatment and prevention of tuberculosis, was established in 1903. The new building, located at Seventh and Lombard Streets, was completed in 1913. The Institute was the first fully organized and equipped institution of the kind with University connection.

In 1909 the University of Pennsylvania originated the first graduate courses in Public Health leading to the degree of Dr.P.H. The Laboratory of Hygiene was the first separate building erected for research work in Hygiene and for the teaching of this subject.

In 1910 the Department of Research Medicine was organized, this being the first University Department of the kind instituted in this country in which the workers are expected to devote practically their entire time to research.

In 1916 the merger between the Medico-Chirurgical College of Philadelphia and the University of Pennsylvania was completed and the Medico-Chirurgical College Graduate School of Medicine of the University of Pennsylvania was organized.

In 1918 the Philadelphia Polyclinic and College for Graduates in Medicine merged with the Graduate School of Medicine and formed the Polyclinic Section.

The number of graduates in the School of Medicine is 14,420.

PART I.

FACULTY.

EDGAR F. SMITH, PH.D., CHEM.D., SC.D., L.H.D., LL.D.,
PROVOST.

JOSIAH H. PENNIMAN, PH.D., LL.D., VICE-PROVOST.

WILLIAM PEPPER, A.B., M.D., Dean of the School of Medicine.

CHARLES K. MILLS, PH.D., M.D., Emeritus Professor of
Neurology.

PROFESSORS.

EDWARD T. REICHERT, M.D., SC.D., Professor of Physiology.

BARTON COOKE HIRST, A.B., M.D., LL.D., Professor of
Obstetrics.

GEORGE A. PIERSOL, M.D., SC.D., Professor of Anatomy.

JOHN MARSHALL, M.D., NAT.SC.D., LL.D., Professor of Chem-
istry and Toxicology.

ALEXANDER C. ABBOTT, M.D., SC.D., DR.P.H., PEPPER Pro-
fessor of Hygiene and Bacteriology.

JOHN G. CLARK, M.D., Professor of Gynecology.

GEORGE E. DE SCHWEINITZ, A.M., M.D., LL.D., Professor of
Ophthalmology.

CHARLES H. FRAZIER, A.B., M.D., SC.D., Professor of Clinical
Surgery.

CHARLES W. BURR, B.S., M.D., Professor of Mental Diseases.

R. TAIT MCKENZIE, A.B., M.P.E., M.D., Professor of Physical
Education and Physical Therapy.

*RICHARD MILLS PEARCE, M.D., SC.D., Professor of Research
Medicine.

ALONZO ENGELBERT TAYLOR, M.D., BENJAMIN RUSH Pro-
fessor of Physiological Chemistry.

ALFRED N. RICHARDS, A.M., PH.D., Professor of Pharma-
cology.

ALLEN J. SMITH, A.M., M.D., SC.D., LL.D., Professor of
Pathology and of Comparative Pathology; in charge of the
courses in Tropical Medicine.

* Resigned.

ALFRED STENGEL, M.D., Sc.D., Professor of Medicine.

MILTON B. HARTZELL, A.M., M.D., LL.D., Professor of Dermatology.

HENRY K. PANCOAST, M.D., Professor of Roentgenology.

M. HOWARD FUSSELL, M.D., Professor of Applied Therapeutics.

B. ALEXANDER RANDALL, A.M., M.D., Ph.D., Professor of Otology.

J. P. CROZER GRIFFITH, Ph.D., M.D., Professor of Pediatrics.

THOMAS R. NEILSON, A.M., M.D., Professor of Genito-Urinary Surgery.

CHARLES P. GRAYSON, M.D., Professor of Laryngology and Rhinology.

DAVID RIESMAN, M.D., Professor of Clinical Medicine.

JOSEPH SAILER, Ph.B., M.D., Professor of Clinical Medicine.

WILLIAM G. SPILLER, M.D., Professor of Neurology.

SENECA EGBERT, A.M., M.D., Professor of Hygiene.

JOSEPH McFARLAND, M.D., Sc.D., Professor of Pathology and Bacteriology.

JOHN C. HEISLER, M.D., Professor of Anatomy.

GEORGE H. MEEKER, Ph.D., Sc.D., LL.D., Professor of Chemistry.

• HORATIO C. WOOD, JR., M.D., Professor of Pharmacology and Therapeutics.

J. EDWIN SWEET, A.M., M.D., Professor of Surgical Research.

JOHN B. DEAVER, M.D., Sc.D., LL.D., JOHN RHEA BARTON, Professor of Surgery.

EDWARD MARTIN, A.M., M.D., Professor of Surgical Physiology.

———, Professor of Orthopedic Surgery.

OSCAR H. PLANT, M.D., Professor of Pharmacology.

WILLIAM H. F. ADDISON, A.B., M.B., Professor of Histology and Embryology.

ON THE GEORGE B. WOOD FOUNDATION.

DANIEL J. MCCARTHY, A.B., M.D., Professor of Medical Jurisprudence.

ASSOCIATE PROFESSORS.

JAMES K. YOUNG, M.D., Associate Professor of Orthopedic Surgery.

T. TURNER THOMAS, M.D., Associate Professor of Applied Anatomy and Associate in Surgery.

ASSISTANT PROFESSORS.

ALFRED C. WOOD, M.D., Assistant Professor of Surgery.

RICHARD C. NORRIS, A.M., M.D., Assistant Professor of Obstetrics.

DAVID H. BERGEY, A.M., M.D., DR.P.H., Assistant Professor of Hygiene and Bacteriology.

PAUL A. LEWIS, M.D., Assistant Professor of Pathology.

GEORGE W. NORRIS, A.B., M.D., Assistant Professor of Medicine.

EDWARD LODHOLZ, M.D., Assistant Professor of Physiology.

GEORGE FETTEROLF, A.B., M.D., Sc.D., Assistant Professor of Anatomy.

LEON A. RYAN, PH.B., PH.D., Assistant Professor of Chemistry and Toxicology.

HENRY ROBERT MURRAY LANDIS, A.B., M.D., Assistant Professor of Medicine.

JOHN ALBERT KOLMER, M.D., DR.P.H., M.Sc., Assistant Professor of Experimental Pathology.

RALPH BUTLER, M.D., Assistant Professor of Otolaryngology.

DAMASO RIVAS, M.S., PH.D., M.D., Assistant Professor of Parasitology.

EDWARD B. KRUMBHAAR, M.D., Assistant Professor of Research Medicine.

BYRON M. HENDRIX, B.S., PH.D., Assistant Professor of Physiological Chemistry.

RAYMOND L. STEHLE, A.M., PH.D., Assistant Professor of Physiological Chemistry.

O. H. PERRY PEPPER, B.S., M.D., Assistant Professor of Medicine.

FRANK C. KNOWLES, M.D., Assistant Professor of Dermatology.

FRED D. WEIDMAN, M.D., Assistant Director, Laboratory of Dermatological Research.

ASSOCIATES.

THOMPSON S. WESTCOTT, A.B., M.D., Associate in Pediatrics.

HERMAN B. ALLYN, A.B., M.D., Associate in Medicine.

WILLIAM R. NICHOLSON, A.B., M.D., Associate in Obstetrics.

JAMES W. McCONNELL, M.D., Associate in Neurology.

BROOKE M. ANSPACH, M.D., Associate in Gynecology.

JOHN B. CARNETT, M.D., Associate in Surgery.

GEORGE P. MULLER, A.B., M.D., Associate in Surgery.
JOHN H. JOPSON, M.D., Associate in Surgery.
JOHN C. HIRST, M.D., Associate in Obstetrics.
MAURICE OSTHEIMER, A.B., M.D., Associate in Pediatrics.
ALBERT PHILIP FRANCINE, A.M., M.D., Associate in Medicine.
SEYMOUR DE WITT LUDLUM, B.S., M.D., Associate in Neurology and Neuropathology.
EDWARD HARRIS GOODMAN, M.D., Associate in Medicine.
GEORGE MORRIS PIERSOL, B.S., M.D., Associate in Medicine.
JOHN HERR MUSSER, JR., B.S., M.D., Associate in Medicine.
CLIFFORD B. FARR, A.M., M.D., Associate in Medicine.
ROBERT G. TORREY, M.D., Associate in Medicine.
THOMAS C. KELLY, M.D., Associate in Medicine.
ELDRIDGE L. ELIASON, M.D., Associate in Surgery.
CHARLES A. FIFE, M.D., Associate in Pediatrics.
HOWARD C. CARPENTER, M.D., Associate in Pediatrics.
J. CLAXTON GITTINGS, M.D., Associate in Pediatrics.
GEORGE M. LAWS, M.D., Associate in Surgery.
ALBERT D. WHITING, M.D., Associate in Surgery.
ARTHUR H. HOPKINS, M.D., Associate in Medicine and Instructor in Practical Therapeutics.
T. GRIER MILLER, M.D., Associate in Medicine.
GEORGE G. ROSS, M.D., Associate in Surgery.
DAMON B. PFEIFFER, M.D., Associate in Surgery.
ASTLEY P. C. ASHHURST, M.D., Associate in Surgery.
L. NAPOLEON BOSTON, M.D., Associate in Medicine.
ARTHUR C. MORGAN, M.D., Associate in Medicine.
JOHN SPEESE, M.D., Associate in Surgical Pathology and Instructor in Surgery.

LECTURERS.

ARTHUR A. STEVENS, A.M., M.D., Lecturer on Medicine.
B. FRANKLIN STAHL, PH.G., B.S., M.D., Lecturer on Dietetics of the Sick.
EDWARD A. SHUMWAY, B.S., M.D., Lecturer on Ophthalmology.

INSTRUCTORS.

CHARLES C. NORRIS, M.D., Instructor in Gynecology and Assistant in Gynecological Pathology.
E. HOLLINGSWORTH SITER, M.D., Instructor in Genito-Urinary Surgery.

- WALTER S. CORNELL, B.S., M.D., Instructor in Osteology.
THOMAS B. HOLLOWAY, M.S., M.D., Instructor in Ophthalmology.
H. MAXWELL LANGDON, M.D., Instructor in Ophthalmology.
WALTER G. ELMER, B.S., M.D., Instructor in Orthopedic Surgery.
THOMAS A. COPE, M.D., Instructor in Medicine.
FLOYD E. KEENE, M.D., Instructor in Gynecology.
CARL WILLIAMS, B.S., M.D., Instructor in Ophthalmology.
FRANK A. CRAIG, M.D., Instructor in Medicine.
JOHN M. CRUCE, A.B., M.D., Instructor in Medicine.
CHARLES M. MONTGOMERY, A.B., M.D., Instructor in Medicine.
WILLIAM JACKSON MERRILL, A.B., M.D., Instructor in Orthopedic Surgery.
SAMUEL LEOPOLD, M.D., Instructor in Neurology and Neuro-pathology.
WILLIAMS B. CADWALADER, M.D., Instructor in Neurology and Neuropathology.
GEORGE H. CHAMBERS, M.D., Instructor in Histology.
J. REX HOBENSACK, M.D., Instructor in Anatomy.
HOWARD A. SUTTON, A.B., M.D., Instructor in Osteology.
PENN-GASKELL SKILLERN, JR., M.D., Instructor in Anatomy.
WARD BRINTON, A.M., M.D., Instructor in Medicine.
BENJAMIN D. PARRISH, B.S., M.D., Instructor in Otology.
HENRY FIELD SMYTH, M.D., DR.P.H., Instructor in Bacteriology.
PHILIP FRANCIS WILLIAMS, PH.B., M.D., Instructor in Obstetrics.
ARTHUR H. GERHARD, A.B., M.D., Instructor in Medicine.
JAMES A. BABBITT, A.M., M.D., Instructor in Otology.
NORMAN L. KNIPE, PH.B., M.D., Instructor in Obstetrics.
CLARENCE D. DANIELS, M.D., Instructor in Obstetrics and Instructor in Histology.
BENJAMIN C. GILE, M.D., Instructor in Otology.
B. F. BAER, M.D., Instructor in Ophthalmology.
EDMUND B. PIPER, M.D., Instructor in Obstetrics.
TRUMAN G. SCHNABEL, M.D., Instructor in Medicine.
GEORGE WILSON, M.D., Instructor in Neurology and Neuro-pathology and Assistant Instructor in Medicine.
DE FORREST WILLARD, M.D., Instructor in Orthopedic Surgery.

- G. VICTOR JANVIER, M.D., Instructor in Obstetrics.
SIMON S. LEOPOLD, M.D., Instructor in Clinical Pathology.
WILLIAM HARTZ, M.D., Instructor in Histology.
VRAM S. NEDURIAN, M.D., Instructor in Histology.
J. J. ROBRECHT, M.D., Instructor in Anatomy.
N. S. ROTHSCCHILD, M.D., Instructor in Anatomy and Assistant
Instructor in Surgical Pathology.
JUSTIN G. SCHWERIN, M.D., Instructor in Laryngology and
Rhinology.
HENRY ETTER STARR, B.S., Instructor in Chemistry and
Toxicology.
JOSEPH F. ULMAN, M.D., Instructor in Physiology.
LEWIS FISHER, M.D., Instructor in Neuro-Otology.
WILLIAM C. WOOD, M.D., Instructor in Otology.
LOUIS SEGAL, M.D., Instructor in Otology.
JOSEPH McIVER, M.D., Instructor in Neurology and Neuro-
pathology.
WILLIAM H. STONER, M.D., Instructor in Chemistry.
THOMAS KLEIN, M.D., Instructor in Medicine.
DAVID N. HUSIK, M.D., Instructor in Laryngology.
CLARENCE K. DENGLER, M.D., Instructor in Dermatology.
LAWRENCE SIMCOX, M.D., Instructor in Otology.
JOHN P. MULRENAN, M.D., Instructor in Neuro-Otology.
BALDUIN LUCKE, M.D., Instructor in Pathology.
STANLEY P. REIMANN, M.D., Instructor in Pathology.
ANDREW H. WOODS, M.D., Instructor in Neurology and Neuro-
pathology.
CHARLES C. WOLFERTH, M.D., Instructor in Medicine.
RICHARD A. KERN, M.D., Instructor in Medicine.
A. G. MITCHELL, M.D., Instructor in Pediatrics.
WILLIAM N. BRADLEY, M.D., Instructor in Pediatrics.
CARL F. SCHMIDT, M.D., Instructor in Pharmacology.
JOHN R. FORST, M.D., Instructor in Ophthalmology.
WILLIAM J. CREIGHTON, M.D., Instructor in Ophthalmology.
THOMSON F. EDWARDS, M.D., Instructor in Surgery.
*RUTHERFORD L. JOHN, M.D., Instructor in Surgery.
HENRY P. BROWN, JR., B.S., M.D., Instructor in Surgery, As-
sistant Instructor in Surgical Pathology and Assistant in
Anatomy.
DAVID HUSTON, M.D., Instructor in Surgery.

*On national duty in Army.

ANDREW CALLAHAN, M.D., Instructor in Medicine.
ISADOR RAVDIN, M.D., Instructor in Surgery.
ROBERT C. PARRISH, M.D., Instructor in Anatomy.
STEPHEN MITTERLING, M.D., Instructor in Anatomy.
J. HOWARD SMITH, M.D., Instructor in Normal Histology and
Instructor in Medicine.
WILLIAM H. FURNESS, M.D., Instructor in Surgical Physiology.
W. ESTELL LEE, M.D., Instructor in Surgical Physiology.
HENRY WINSOR, M.D., Instructor in Surgery.
ISADORE KAUFMAN, M.D., Instructor in Medicine.
JAMES A. SMITH, M.D., Instructor in Medicine.
DAVID N. KREMER, M.D., Instructor in Histology.
ARTHUR B. LIGHT, M.D., Instructor in Physiology.

ASSISTANT INSTRUCTORS.

LEON F. LUBURG, M.D., Assistant Instructor in Obstetrics.
WILLIAM H. MACKINNEY, M.D., Assistant Instructor in Genito-
Urinary Surgery.
EVERETT P. BARNARD, M.D., Assistant Instructor in Obstetrics.
ENGELBERT C. BENDER, M.D., Assistant Instructor in Laryn-
gology.
ALEXANDER RANDALL, A.M., M.D., Assistant Instructor in
Genito-Urinary Surgery.
HARRY BOND WILMER, M.D., Assistant Instructor in Medicine.
FRANK B. BLOCK, M.D., Assistant Instructor in Gynecology.
SETH A. BRUMM, M.D., Assistant Instructor in Otology.
THOMAS C. LLEWELLYN, M.D., Assistant Instructor in Gyne-
cology.
S. B. GOLDSMITH, M.D., Assistant Instructor in Anatomy.
H. A. SCHATZ, M.D., Assistant Instructor in Otology.
J. LEON HERMAN, M.D., Assistant Instructor in Genito-Urinary
Surgery.
HAROLD W. HOW, M.D., Assistant Instructor in Pathology.
ANNIE E. TAFT, M.D., Assistant Instructor in Neurology.
NATHANIEL W. WINKELMAN, M.D., Assistant Instructor in
Neurology.
ABRAHAM M. ORNSTEEN, M.D., Assistant Instructor in Neu-
rology.
DAVID L. FARLEY, M.D., Assistant Instructor in Medicine and
Bacteriologist and Serologist in Cutaneous Medicine.
ARTHUR W. PHILLIPS, M.D., Assistant Instructor in Medicine.

SAMUEL H. KOHLMAN, M.D., Assistant Instructor in Medicine.

JOHN EIMAN, M.D., Assistant Instructor in Pathology.

MORTON McCUTCHEON, M.D., Assistant Instructor in Pathology.

JOHN ALEXANDER, M.D., Assistant Instructor in Surgery.

EDWARD T. CROSSAN, M.D., Assistant Instructor in Surgery.

WILLIAM HEWSON, M.D., Assistant Instructor in Medicine.

ANNE THOMAS, M.D., Assistant Instructor in Medicine.

DRURY HINTON, M.D., Assistant Instructor in Surgery.

RALPH GOLDSMITH, M.D., Assistant Instructor in Surgery.

SAMUEL STURGIS, M.D., Assistant Instructor in Surgery.

BENJAMIN McINTIRE, M.D., Assistant Instructor in Medicine.

STIRLING W. MOORHEAD, M.D., Assistant Instructor in Genito-Urinary Surgery.

ALEXANDER FEWELL, M.D., Assistant Instructor in Ophthalmology.

P. H. SHAW, M.D., Assistant Instructor in Ophthalmology.

MARKLEY C. ALBRIGHT, M.D., Assistant Instructor in Obstetrics.

ALFRED J. OSTHEIMER, M.D., Assistant Instructor in Neurology.

MARION REA LUCKE, M.D., Assistant Instructor in Medicine.

CLEMENT R. BOWEN, M.D., Assistant Instructor in Orthopedic Surgery.

P. S. PELOUZE, M.D., Assistant Instructor in Genito-Urinary Surgery.

G. P. PILLING, M.D., Assistant Instructor in Genito-Urinary Surgery.

SAMUEL COHEN, M.D., Assistant Instructor in Laryngology and Rhinology.

ASSISTANTS.

J. GARRETT HICKEY, D.D.S., M.D., Assistant in Physiology.

ALFRED CHANUTIN, PH.B., Assistant in Research Medicine.

PART II.

ADMISSION REQUIREMENTS.

VACCINATION.

According to the Regulations of the Bureau of Health of the City of Philadelphia, the University of Pennsylvania is required to refuse admission to any person except upon a certificate signed by a physician stating that such person has been recently vaccinated or that he or she has previously had smallpox. All persons matriculating in the University will, therefore, have to present such a certificate at the time of matriculation and in default of such certificate must be vaccinated. Official forms furnished by the Bureau of Health of the City of Philadelphia can be obtained by applying in person or by messenger at City Hall.

LIMITATION OF SIZE OF CLASSES.

The first and second year classes of the School of Medicine of the University of Pennsylvania are limited to one hundred students each.

REQUIREMENTS FOR ADMISSION

TO THE

SCHOOL OF MEDICINE, UNIVERSITY OF PENNSYLVANIA.

The minimum requirements are a standard four-year high school course or its equivalent, plus two years of work in an approved college of arts and science, aggregating not less than 30 units,* including courses in French or German and in English, Physics, Chemistry and General Biology or Zoology, with appropriate laboratory work (see detailed explanation below).

No entrance conditions are allowed. It is not now, and in fact it has not been possible since 1910, to enter the School of Medicine

*A unit of college work is the equivalent of one hour of lecture or recitation each week for the full academic year or of two hours of laboratory work each week for the same period.

with deficiencies in the entrance requirements and to make these up either during the first year, between the first and second years, or later.

It is recommended that students in a position to complete their college courses should do so, whenever possible, including in their courses the necessary work in the sciences. Each year the percentage of students with collegiate degrees entering medical schools in this country is steadily increasing. Men and women are admitted upon the same terms.

STATE PRELIMINARY REQUIREMENTS.

The requirements for admission to the medical course of a college in the State of Pennsylvania call for the completion of a standard four-year high school course of study, or its equivalent, and a year of college credits in each of the sciences, Physics, Chemistry and Biology. By presenting satisfactory credentials the applicant may secure, through an Examiner, a State Preliminary Certificate (John Loman, Examiner, Perry Building, Sixteenth and Chestnut streets, Philadelphia, Pa.). Such a certificate *will not, unless accompanied by sufficient additional credentials, be accepted as evidence that the applicant has met the University of Pennsylvania requirements.*

State Preliminary Certificates are required of those graduates in medicine who present themselves before the Bureau of Medical Education and Licensure for a license to practice in the State of Pennsylvania.

APPLICATION FOR ADMISSION.

Applications should be made to the Dean of the School of Medicine, who will furnish a printed application blank, part of which is to be filled out by the candidate and part by the proper authorities of the College at which the candidate has prepared for the study of Medicine.

Candidates who present certificates filled out on the application blank, from recognized colleges giving evidence that they have met all the requirements of the School of Medicine of the University of Pennsylvania will be admitted without examinations, if vacancies exist in the class to which admission is sought. The certificates must show the exact amount of French or German, English, Physics, Chemistry and Zoölogy or General Biology studied. Candidates

who are unable to meet the requirements by certificate, may apply for examinations in the subject in which they are deficient. Applications for such examinations should be made to George Gailey Chambers, Ph.D., Director of Admissions, Room 113, College Hall, University of Pennsylvania, not later than June 1st.

Full credit for the required amount of Physics, Chemistry, and Zoölogy or General Biology cannot be obtained by examination alone, as a satisfactory amount of laboratory work in these sciences must have been completed at college and the certified laboratory note book of the candidate in these subjects must have been presented to the Dean of the Medical Faculty.

Time spent in professional schools of law, dentistry, pharmacy or veterinary medicine, or in normal schools or business college will not be accepted as the equivalent of any part of the two years of college work required for admission to the School of Medicine. At least two full years of the candidate's pre-medical training must have been spent in some recognized college of arts and science. No amount of time spent in a professional school can be considered as having given the collegiate training demanded by the entrance requirements of the School of Medicine of the University of Pennsylvania.

The decision as to whether a candidate's preparation meets the entrance requirements of the University of Pennsylvania rests with an Admission Committee composed of three members of the Faculty of the College of this University. As the size of the first-year class is limited, it is proposed, in case a greater number apply, to choose one hundred of the most promising applicants. The selection will be made after carefully considering the following points: the character of the college at which the candidate prepared; the standing of the applicant, especially in the three sciences and the opinion held by one of the science teachers of the candidate's ability and fitness to pursue the study of medicine at the University of Pennsylvania, this opinion to be sent to the Dean in a personal letter.

Applications for admission may be presented at any time before July 1st, but will not be considered officially before that date except in unusual circumstances. Notification of acceptance for enrollment as a student or of non-acceptance through lack of space will be sent all candidates not later than July 15th.

DETAILED DESCRIPTION OF COLLEGE WORK.

A. The following subjects must be offered and in the sciences include laboratory work. The candidate's laboratory note books should be presented, certified by the teacher in the usual way.

| Subjects | Units |
|--|-------|
| Chemistry.—General Inorganic Chemistry at least three units, and Organic Chemistry at least two units, a total of at least | 6 |
| Physics | 4 |
| Zoölogy or General Biology | 4 |
| French or German | 3 |
| English | 6 |

For applicants whose native language is other than English, the English requirements above will be transferred to the applicant's native language, and English may be offered by such applicant in lieu of other modern scientific languages. However, in all such instances, the applicant must be able to readily read, write and speak English.

(Elementary courses in either French or German taken in college will not be considered as meeting this requirement. For example, a student who has not presented French for college entrance must, in order to receive credit for three units of college French, take first in college a course in elementary French followed by a three-unit course in more advanced French. This rule holds also for German.)

(For full description of the three science requirements see below.)

B. At least seven units, made up of subjects which are open to Freshmen and Sophomores in colleges or universities of recognized standing.

For description of appropriate branches representing this portion of the candidate's preparation, reference may be made to the College Announcement or the Annual Catalogue of this University.

The various studies are not here detailed; since considerable latitude of election exists in many colleges and more or less variation in prescribed courses also occurs in different college curricula. Such differences occasioned by election or by regular requirements of institutions will be adjudged by comparison with the work of the Freshman and Sophomore Classes of the College of the University of Pennsylvania.

ENGLISH.

Credits for six units of collegiate English is pre-requisite for admission to the School of Medicine. It may be suggested that these six units include 3 units of English composition (as in Courses 1 and 3, English Department of the College, University of Pennsylvania, for which see College Announcement), 1 unit of English language (as in Course 30, English Department of the College, University of Pennsylvania), and 2 units of English literature (as in Courses 40 and 42, English Department of the College, University of Pennsylvania).

**REPRESENTING SPECIAL SCIENTIFIC REQUIREMENTS
FOR MEDICAL STUDIES.****CHEMISTRY.**

Credit for six units in collegiate Chemistry is prerequisite for admission to the School of Medicine. These requirements are in general covered by the regular courses in chemistry in colleges recognized by this University. They are covered by courses 1 and 11 of the Department of Chemistry of this University. Credits in chemistry (whether by diploma, certificate or on examination) presented by candidates must be equivalent to said courses 1 and 11 of the Department of Chemistry of this University. Six units of college work in chemistry are required, but at least *two units* must be presented in *organic chemistry*. Laboratory work must accompany the course in organic as well as in inorganic chemistry.

PHYSICS.

Credit for four units of collegiate Physics is prerequisite for admission to the School of Medicine. These requirements are in general covered by the regular lecture and laboratory courses in Physics in colleges recognized by this University. Courses 1 and 2 of the Department of Physics of this University fulfil the requirements. Plane Trigonometry (Mathematics 2) is a prerequisite.

Physics 1 is an elementary College Course in General Physics, consisting of one lecture hour and two hours recitation per week for one year, and counts two units of collegiate work.

Physics 2 is a laboratory course, consisting of one lecture and two hours laboratory work per week for one year. Each student performs about twenty-five experiments chosen from the entire field of elementary Physics. This course also counts two units.

Any similar courses offered by recognized colleges, and equivalent in both amount and grade of work, will be accepted as fulfilling the requirements for admission to the School of Medicine.

GENERAL BIOLOGY OR GENERAL ZOÖLOGY.

Credit for four units of collegiate Biology or Zoölogy is prerequisite for admission to the School of Medicine. Credits in these subjects must be equivalent to Course 1 of the Department of Zoölogy (3 units) or to half of Course 1 of the Department of Zoölogy together with half of Course 1 of the Department of Botany (3 units) of this University. In addition one extra unit must be presented in similar subjects. Botany alone does not meet the requirements.

TWO-YEAR COURSE PREPARATORY TO MEDICINE.

Students who wish to spend two years in the College of the University of Pennsylvania, preparatory to the School of Medicine, should register in Arts and Science,* and should be careful to present for admission either French or German. They should inform the Dean of the College that it is their intention to enter the School of Medicine, when they will be referred to an appropriate adviser. In case the number of applicants exceeds the capacity of the School of Medicine, the Admission Committee will exercise the power of selection. For full details see the Announcement of the College, copies of which may be had upon application to the Dean of the College.

SEVEN-YEAR COMBINED MEDICAL AND COLLEGIATE COURSE.

A student in the course in Arts and Science of the University of Pennsylvania may, in his Senior year, provided the Dean of the College certifies to his fitness to study medicine, register also as a regular student in the First-year Class in the School of Medicine (see University of Pennsylvania General Catalogue).

In case the number of applicants for admission exceeds the capacity of the School of Medicine the Admission Committee will exercise the power of selection.

*Men who wish to spend but two years in the College should register in the course in Arts and Science; women should register in the course in Biology.

ADMISSION TO ADVANCED STANDING.

Applications for admission to advanced standing in the Second, Third or Fourth Year Classes will be considered. The Second Year Class is limited to 100 students, the Third and Fourth Year Classes to 125. In consequence, more advanced standing students can be admitted to the Third Year Class than to the two other classes.

Students will only be admitted to the Second and Fourth Year Classes if vacancies have occurred.

Applicants for advanced standing must have met in full the requirements for admission (page 24), and must have attended a medical school approved by this University. Students from schools rated as "Class B" or "Class C" by the Council on Medical Education of the American Medical Association will not be admitted to advanced standing.

Applicants for admission must furnish evidence that they have satisfactorily completed courses equivalent in kind and amount to those taken by the class to which admission is sought, and must present also a letter of honorable dismissal. Students will not be admitted to advanced standing upon examination, but only upon a satisfactory record from their previous school. The University of Pennsylvania reserves the right, however, in every case to give examinations in all subjects already pursued by the class to which admission is sought, but such examinations as a matter of fact are only given in exceptional cases.

It is very essential that applications for admission be forwarded to the Dean not later than June 1st. It is also necessary that applicants send or present to the Dean their subject credentials, letters of recommendation and honorable dismissal before June 15th.

Applications for admission may be presented at any time before June 1st, but will not be considered officially until June 15th except under exceptional conditions. Notification of acceptance for enrolment as a student or of non-acceptance through lack of space or other reason will be sent all candidates before July 1st.

No student coming from another school will be allowed any privileges in this school which would have been denied him in the school which he leaves.

No student will be admitted to any class on advancing standing with a condition in any subject.

PART III.

UNDERGRADUATE INSTRUCTION.

The course of instruction extends over a period of four years, with one session in each year, beginning on the last Friday of September and ending on the third Wednesday in June.

The course may be said to be divided into two periods of two years each: the first period devoted to the fundamental medical sciences, Physiological Chemistry, Toxicology, Anatomy, Physiology, Bacteriology, Pharmacology and Pathology, including also Physical Diagnosis; the second period to the clinical subjects, Medicine, Surgery, Obstetrics and the Specialities.

FIRST PERIOD.

The subjects of the first two years have been arranged according to a modification of the concentration system. By this system the student is enabled to concentrate his energy upon one or two subjects, and must master these before he is allowed to continue the course. Thus the first year is devoted chiefly to Anatomy, including Embryology, Normal Histology and Osteology, and to Physiological Chemistry, and Bacteriology.

The subjects of the second year follow in logical sequence those of the year preceding. The time of the second year is thus given over largely to Physiology, Pathology and Pharmacology. In addition to these the work of the second year includes a course in Toxicology.

Instruction upon the subjects of the first two years is almost entirely practical, so that the greater part of the student's time is spent in the laboratories.

The limitation of the first- and second-year classes to one hundred students each prevents the possibility of overcrowding the laboratories and insures a proper amount of individual instruction.

SECOND PERIOD.

With the beginning of the third year the student enters upon the second period, which covers the third and fourth years, and is devoted almost exclusively to instruction in the so-called clinical subjects—Medicine, Surgery, Obstetrics and the Specialities. There

is no sharp dividing line between the work of the third and fourth years, so that the courses in the clinical subjects may be said to cover a period of two years.

From a glance at the tabular representation of the hours of instruction for the third and fourth years (later pages), it will be seen that arrangements have been made to keep the student fully occupied throughout each day. In point of fact, any desire to specialize before graduation is rather discouraged. It has always been the object and aim of this institution to prepare its students for the practice of general medicine, not to graduate them as "*specialists*." *Its policy has been to offer the student a well-graded, well-proportioned and comprehensive course*, so that upon his graduation he stands prepared to *practice* medicine. Should he decide to take up a specialty after graduation, he will be the better prepared by his broad education, and still better prepared if he has had several years of clinical experience.

The above statement, however, should not be interpreted as meaning that opportunity will not be given to selected students who are capable and willing to engage in some investigative or advanced individual work, which might lead later to research work of value. Encouragement and facilities will be given to such students to gain a greater insight into the opportunities for research work and the need for trained investigators and teachers in the medical sciences.

The methods of instruction are varied, but mostly practical. The latter include ward visits, ward classes, clinical conferences and practical observation in the wards and out-patient department of the University Hospital. Systematic lectures, general clinics and recitations have been found indispensable, but play a less conspicuous part in the course.

The facilities for instruction are abundant. It is possible to offer to each student opportunities to come into personal contact under proper supervision with a large and varied series of cases. The University Hospital, with its capacity of 400 beds, is operated exclusively for the benefit of the School of Medicine. Adjoining the University campus is the Philadelphia General Hospital, with a capacity of 1,600 beds, where the wards are open to both teachers and students throughout the year; this not including the adjoining Philadelphia Insane Hospital, with over 2,000 beds, also available for teaching purposes. Material advantage is had, too, by the students of the Fourth-year Class in attendance in sections upon the work of the Phipps Institute for the Study, Prevention and Cure of

Tuberculosis, acquired by the University through the generosity of Mr. Henry Phipps.

In addition, extramural teaching is conducted in the Children's, the Laukenau and Pennsylvania Hospitals by members of the teaching staff. A voluntary course upon the contagious diseases, conducted at the Municipal Hospital, is offered to the members of the Graduating Class.

COURSES OF INSTRUCTION.

The figures at the right of the page indicate fairly accurately the number of hours of instruction which each individual student receives in the various required courses.

ANATOMY.

| | |
|-----------------------------------|--|
| GEORGE A. PIERSOL, M.D..... | <i>Professor of Anatomy.</i> |
| JOHN C. HEISLER, M.D..... | <i>Professor of Anatomy.</i> |
| WILLIAM H. F. ADDISON, M.B..... | <i>Professor of Histology and Embryology.</i> |
| T. TURNER THOMAS, M.D..... | <i>Associate Professor of Applied Anatomy.</i> |
| GEORGE FETTEROLF, M.D..... | <i>Assistant Professor of Anatomy.</i> |
| WALTER S. CORNELL, M.D..... | } <i>Instructors in Osteology.</i> |
| HOWARD A. SUTTON, M.D..... | |
| J. REX HOBENSACK, M.D..... | } <i>Instructors in Anatomy.</i> |
| PENN-GASKELL SKILLEN, JR., M.D... | |
| J. J. ROBRECHT, M.D..... | |
| N. S. ROTHSCHILD, M.D..... | |
| ROBERT C. PARRISH, M.D..... | } <i>Instructors in Histology.</i> |
| STEPHEN MITTERLING, M.D..... | |
| GEORGE H. CHAMBERS, M.D..... | |
| J. HOWARD SMITH, M.D..... | |
| C. D. DANIELS, M.D..... | |
| WILLIAM HARTZ, M.D..... | |
| VRAM NEDURIAN, M.D..... | |
| DAVID N. KREMER, M.D..... | <i>Acting Instructor in Histology.</i> |
| HENRY WINSOR, M.D..... | <i>Prosecutor to Professor of Anatomy and to Associate Professor of Applied Anatomy.</i> |
| HENRY P. BROWN, JR., M.D..... | <i>Volunteer Assistant in Anatomy.</i> |
| ERWIN F. FABER | <i>Instructor in Drawing.</i> |

Of the following courses in Anatomy, I to VII, inclusive, are required of candidates for the degree of Doctor of Medicine. Courses VIII to XII are not required, but may be taken by students who have had satisfactory preparatory training.

| FIRST YEAR. | | Hours |
|--|--|-------|
| I. LECTURES ON SYSTEMATIC ANATOMY OF THE ORGANS. <i>Professor Piersol.</i> —Three times a week, first half year. | | 48 |
| II. LECTURES ON ANATOMY OF THE CENTRAL NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE. <i>Professor Piersol.</i> —Three times a week, second half year | | 48 |
| III. LECTURES ON MYOLOGY, ANGIOLOGY AND THE PERIPHERAL NERVES. <i>Professor Heisler.</i> —Once a week throughout the year | | 32 |
| IV. LABORATORY COURSE IN HISTOLOGY AND EMBRYOLOGY. <i>Professor Addison, Drs. Chambers and Smith.</i> —Two and a half hours, twice a week, first half year; three and a half hours, twice a week, second half year | | 192 |
| V. LABORATORY COURSE IN OSTEOLOGY. <i>Drs. Cornell and Sutton.</i> —Two and a half hours, five times a week, first three weeks, first half year | | 36 |
| VI. DISSECTION. <i>Professor Heisler, Drs. Hobensack, Skillern, Rothschild, Parrish and Mitterling.</i> —Two hours and a half, five times a week, for twenty-eight weeks | | 350 |
| THIRD YEAR. | | |
| VII. APPLIED ANATOMY. <i>Associate Professor Thomas.</i> —One hour, twice a week, throughout the year | | 64 |
| VIII. SPECIAL COURSE ON ANATOMY OF SENSE ORGANS. <i>Professor Piersol.</i> —February 1 to May 15; Wednesday mornings. | | |
| IX. SPECIAL COURSE IN ANATOMY OF FRACTURES AND LUXATIONS. | | |
| X. ADVANCED LABORATORY COURSE IN VERTEBRATE EMBRYOLOGY. <i>Professors Piersol and Addison.</i> —October 15 to May 1; mornings. | | |
| XI. LABORATORY COURSE IN MICROSCOPICAL TECHNIQUE. <i>Professors Piersol and Addison.</i> —April 1 to May 15; three mornings weekly. | | |
| XII. ADVANCED WORK AND ORIGINAL INVESTIGATION. <i>Professor Piersol.</i> —October to May. | | |

Courses I and II, three lectures a week throughout the session, present the principles, as well as details, of human anatomy, including structure and development. Especial pains are taken to impress the broader morphological significance of the details of human anatomy. These courses are exceptionally well illustrated by means of charts, lantern, models, museum preparations and fresh dissections, the unusual resources of the Wistar Institute of Anatomy and Biology being additionally available, not only for class instruction but also for individual study.

In Course IV the student is required to mount, study and draw preparations of all of the important tissues and organs of the human body, as well as to learn the methods employed in their preparation.

Time also is devoted to the mounting and study of series of chick and mammalian embryos. The laboratory is equipped with excellent microscopes of recent model, and supplied with the most approved apparatus for histological and embryological work.

Course V includes the detailed study of the skeleton, each student being provided with bones which he is required to draw, noting the important features and principal muscular attachments. The joints are also studied on finished dissections. Bones are lent to students upon conditions similar to those governing the issue of books from a library.

Course VI forms a most important part of the first-year work, every student being required to carefully dissect and pass practical examinations upon the cadaver. The class works two and a half hours daily under the close supervision of the Professor of Anatomy and his assistants. Excellent and abundant dissecting material is assured by the improved methods of preservation and the facilities for cold storage. Opportunity for additional work is afforded to students who desire to devote more time to practical anatomy.

Course VII is a continuation of the study of anatomy, but from the standpoint of its application, and not as an abstract science. The course embraces surface anatomy, the outlines of the organs, the position of the joints, significance of bony points, muscular swells, the position and means of recognizing the various nerves and arteries; the influence of the muscles in fractures; the construction of joints in reference to luxations; a knowledge of the parts incised in amputations; how the parts influence and direct the progress of abscesses; a knowledge of the lymphatics in reference to pyogenic and carcinomatous infections; a knowledge of the position and relation of the abdominal organs necessary for diagnostic and operative purposes; also those of the chest; cerebral localization, paralysis,

etc., and innumerable other facts. Attention is given to the relation of the various tissues and organs to each other, so that the operations on those parts may be understood. It is the object of the course to present to the student the subject of anatomy in such manner as to enable him to utilize it in forming diagnoses and applying methods of treatment.

Instruction is given by demonstrations. These embrace the living and dead body and anatomical preparations. Special dissections and preparations are made to illustrate and explain fractures, dislocations, amputations, ligation of arteries, the position and relation of organs by frozen sections, etc., and also by injections of wax, the affections of the joints, palmar and other abscesses, etc.

BACTERIOLOGY AND HYGIENE.

ALEXANDER C. ABBOTT, M.D., Sc.D., Dr.P.H., *PEPPER Professor of Hygiene and Bacteriology.*

SENECA EGBERT, M.D. *Professor of Hygiene.*

DAVID H. BERGEY, A.M., M.D., Dr.P.H., *Assistant Professor of Hygiene and Bacteriology.*

HENRY FIELD SMYTH, M.D., Dr.P.H., *Instructor in Hygiene and Bacteriology.*

MIRIAM ISZARD, M.A. *Assistant Instructor in Bacteriology.*

ETTA FISK, B.A. THOMAS A. SCOTT *Fellow in Hygiene.*

..... GEORGE B. WOOD *Fellow in Hygiene.*

BACTERIOLOGY.

FIRST YEAR.

| | Hours |
|--|-------|
| LECTURES. <i>Professor Abbott.</i> —Once a week, first half year. | 16 |
| LABORATORY. <i>Professor Abbott, Assistant Professor Bergey, Dr. Smyth.</i> —Three and a half hours, four times a week, second half year | 190 |

I. LECTURES. This course comprehends those elementary phrases of the subject with which the student should be familiar at the time he begins his practical work.

II. LABORATORY COURSE. During this course the students receive instruction in the use of the microscope in bacteriological work; the methods of cultivating bacteria and of isolating them in pure cultures; the steps necessary to the identification of particular species of bacteria; the relation of bacteria to infection; the methods of immunization and vaccination; the methods of sterilization and dis-

infection; the testing of disinfectants; the bacteriological study of air, water and soil, etc. Such students as demonstrate ability to advance beyond the class work are given the opportunity to do so and are encouraged to pursue such studies providing the latter do not interfere with hours assigned to other subjects.

The course in detail covers the following subjects:

1. Apparatus employed—sterilizers, incubators, pressure regulators, thermostats, etc.
2. Culture media, methods of preparation, sterilization methods.
3. Characteristics of cultures of bacteria in general and of special forms.
4. Methods of obtaining, from mixtures of different bacteria, individual species in pure cultures.
5. Microscopic technique. Use and care of instruments, staining from cultures, section cutting, and staining and mounting of tissues.
6. Pathogenic bacteria isolation, identification and inoculation.
7. Disinfection, thermal and chemical, methods and apparatus, modes of testing efficiency.
8. Bacteriological investigation of water.
9. Bacteriological investigation of air.
10. Bacteriological investigation of soil.
11. Studies in immunity, including: the antitoxic state and the modes of inducing it; protective vaccinations with living and dead viruses; and the opsonic theory.
12. Demonstration of such protozoa as are known to be of medical significance.

HYGIENE.

THIRD YEAR.

Hours

| | |
|--|----|
| LECTURES. <i>Professor Abbott</i> .—Twice a week, for first half | |
| year | 32 |

The teaching in Hygiene consists of a course of systematic lectures to the Third-year Medical students, and, if time be available, of practical exercises in the laboratory. The didactic course is compulsory for all students receiving the degree of Doctor of Medicine, while the practical course is voluntary.

The lectures are given twice weekly throughout the first term. They cover the following topics of general sanitary importance:

A consideration of the factors concerned in the direct causation of disease, and the manifold conditions of life that indirectly favor

the occurrence of disease among individuals, groups of individuals and communities.

A brief sketch of the important transmissible and epidemic diseases, embracing a discussion of their modes of transmission, portals of infection, geographical and seasonable distribution and the approved methods of their prevention.

A consideration of prophylaxis in general, embracing disinfection and disinfectants, protective vaccination and the antitoxic state, the disposal of the dead after infectious diseases, and quarantine.

The hygiene of milk production. The legal aspects of public health administration.

The atmosphere, from the chemical, physical, and biological standpoints; the air of enclosed spaces; the problems of ventilation and heating; the various pollutions of the atmosphere, such, for instance, as those from the soil, from industries, from sewers, etc., and their influence on health and disease.

Water—its sanitary significance; the characteristics of waters from various sources and their suitability to domestic needs; the pollutions to which waters from different sources are liable; the biological significance of these pollutions; interpretations of the results of analysis; natural and artificial purification of waters; the relation of water to health and disease.

Sewage—the part taken by the soil and its constituents in the disposal of organic waste; the characteristics of sewage from different sources; the various methods for the disposal of sewage; the influence of sewage disposal upon the health of communities.

PRACTICAL COURSE. *Professor Abbott, Assistant Professor Bergey and Dr. Smyth.*—The following subjects, arranged especially for the needs of those students intending to enter upon the practical pursuit of sanitary work, are taken up:

1. The atmosphere, climate and meteorological observations and records, chemical analysis, bacteriological investigation, methods of investigation, methods of ventilation and heating.

2. Water—physical, chemical and bacteriological investigation of water-supplies; methods of obtaining samples; qualitative and quantitative analysis for impurities; collection, storage and purification of water intended for domestic use; effects of filters, aeration, etc.

3. Sewage disposal, sewers, house drainage and the air of sewers.

4. Disposal of refuse, cremation of garbage, etc.

5. Soils and building sites, physical, chemical and bacteriological investigation, soil and moisture, ground air.

6. Foods—adulteration, milk and meat inspections.
7. Clothing—microscopic examination, poisonous dyes.
8. Management of contagious diseases. Practical tests of different methods of disinfection, chemical and thermal; notification, isolation and quarantine.
9. Vital statistics, registration and methods of tabulation.
10. Offensive and dangerous trades.

COURSE IN PUBLIC HYGIENE. (See page 83.)

ORIGINAL INVESTIGATION. In addition to the foregoing set courses, facilities are offered by the Laboratory for special work. Students and graduates of this school or elsewhere will find opportunities for advanced work in any of the subjects properly coming within the scope of the Laboratory. Arrangements for such work can be made by correspondence with the Director of the Laboratory.

PHYSIOLOGICAL CHEMISTRY.

ALONZO ENGLEBERT TAYLOR, M.D., BENJAMIN RUSH *Professor of Physiological Chemistry.*
 GEORGE H. MEEKER, PH.D., SC.D., LL.D.... *Professor of Chemistry.*
 R. L. STEHLE, PH.D. } *Assistant Professors of Physio-*
 B. M. HENDRIX, PH.D. } *logical Chemistry.*
 W. B. STONER, M.D. *Instructor in Chemistry.*

FIRST YEAR.

| | Hours |
|---|-------|
| LECTURES. <i>Professor Taylor and Assistant Professors Stehle and Hendrix.</i> —Four times a week, first half year | 64 |
| LABORATORY. <i>Professor Taylor, Assistant Professors Stehle and Hendrix.</i> —Two and a half hours, four times a week, first half-year | 160 |
| RECITATIONS.— <i>Assistant Professors Stehle and Hendrix.</i> —Four times a week, first half year | 64 |

Instruction in Physiological Chemistry is given during the first year of the medical course. Since all students enter the department with collegiate chemistry and physics, the work of the course in physiological chemistry is confined strictly to physiological chemistry. The course of instruction comprises a systematic survey of the field of physiological chemistry, particular attention being devoted to metabolism. The viewpoint of the course is physiology, interpreted from the modern concepts of physics and chemistry. Especial

attention is paid to the instruction in analysis, in order that the future physician may be properly equipped to judge and to use approved physical and chemical methods in the investigation of morbid physiology.

The research laboratories of the department are open to workers qualified to undertake original investigations in physiological chemistry.

Graduate Work: Qualified students may elect physiological chemistry, in accordance with the regulations of the Graduate Council.

PHYSIOLOGY.

| | |
|--------------------------------------|---|
| EDWARD T. REICHERT, M.D., Sc.D. . . | <i>Professor of Physiology.</i> |
| EDWARD LODHOLZ, M.D. | <i>Assistant Professor of Physiology.</i> |
| JOSEPH F. ULMAN, M.D. | } <i>Instructors in Physiology.</i> |
| ARTHUR B. LIGHT, M.D. | |
| J. GARRETT HICKEY, M.D., D.D.S. | <i>Assistant in Physiology.</i> |

Of the following courses in Physiology, I to VII, inclusive, are required of candidates for the degree of Doctor of Medicine. Courses VIII to XII are not required, but may be taken by students who have had satisfactory preparatory training.

SECOND YEAR.

| | Hours |
|--|-------|
| I and II. LECTURE. <i>Professor Reichert</i> —Four times a week. . . . | 128 |
| III, IV, V and VI. LABORATORY. <i>Professor Reichert, Assistant Professor Lodholz, Drs. Ulman and Light</i> .—Three hours, twice a week | 192 |
| VII. CONFERENCES. <i>Drs. Ulman and Light</i> .—In sections. Once a week, for each student | 64 |

The instruction in Physiology embraces systematic courses of lectures, practical work by the student, demonstrations and conferences given during and extending throughout the second year. The students, therefore, before entering upon their work in this department, have been trained in Physiological Chemistry, Anatomy and Normal Histology.

I and II. LECTURES. On the general subject of Nutrition, from the last Monday in September to February 1st, and on the Heat Mechanism and the Nervous and Muscular Systems, from February 1st to the end of the session.

The lectures are copiously illustrated by tables, charts, diagrams and drawings, this being supplemented and considerably extended by the courses of instruction in the demonstration-room and laboratory.

III. STUDENTS' LABORATORY WORK, IN ILLUSTRATION AND EXTENSION OF COURSE I.

IV. STUDENT' LABORATORY WORK, BEARING A SIMILAR RELATION TO COURSE II.

The course of practical work has been carefully and systematically planned, chiefly upon the *inductive* method of instruction, and seven and a half hours a week are assigned to each student for this work, together with demonstrations and conferences. The main objects sought in the laboratory are: the illustration of the lectures by the most impressive methods; the supplementation of collateral work to further impress important fundamental facts and broaden their application; the training in the use of instruments of precision, with especial reference to the use of apparatus in clinical and experimental medicine; the cultivation of the individual's power of observation and deduction; the encouragement of accuracy of expression and method, of collateral work, and the co-ordination of facts.

The instruction in the practical work is given under the direction of the Professor of Physiology by the Assistant Professor and the Instructors. Each student is assigned a table and the necessary apparatus, and works under the direct supervision of the teaching staff. He is directed in technique and in what to observe, but he is self-dependent as to his results and conclusions, which he must present for examination in the form of "graphic records" and written records at the end of each exercise.

V and VI. DEMONSTRATION. *Assistant Professor Lodholz, Drs. Ulman and Light.*—Two corresponding series of demonstrations, which take the place of practical work when the latter is of a character too difficult or otherwise undesirable for the student to pursue; as, for instance, work involving the use of complicated or very expensive apparatus, the employment of mammals, etc. These demonstrations are given in their proper relation to other instruction in physiology.

VII. CONFERENCES. *Drs. Ulman and Light.*—Conferences which cover the subject-matter of the lectures are held weekly, and examinations monthly.

VIII. JOURNAL CLUB. Recent work in Physiology is reported by the members of the department, and by those actively engaged in research and advanced work in the laboratories.

IX. SEMINAR. Problems under investigation in the department are introduced for the mutual advantage of discussion. Conducted by Professor Reichert and the staff of the department.

X. GRADUATE COURSES. *Professor Reichert.*—These courses are arranged to suit the requirements of those presenting themselves for the work. Rooms and apparatus are placed at the disposal of such students, and every facility is offered for the prosecution of research.

XI. ELECTIVE COURSES IN ADVANCED PHYSIOLOGY. *Professor Reichert.*—These are offered to students of the third and fourth years in Medicine. The intention is to give to those who may desire it an opportunity to continue the laboratory work of the previous year in ways that are impossible with large classes, and as a foundation for the prosecution of research.

XII. RESEARCH. The laboratory offers all the advantages of its facilities and equipment for the investigation of problems in Physiology. This may be arranged for at any time by communicating with Professor Reichert.

PATHOLOGY.

| | |
|------------------------------|---|
| ALLEN J. SMITH, M.D. | <i>Professor of Pathology.</i> |
| JOSEPH MCFARLAND, M.D. | <i>Professor of Pathology.</i> |
| *PAUL A. LEWIS, M.D. | <i>Assistant Professor of Pathology.</i> |
| JOHN A. KOLMER, M.D. | <i>Assistant Professor of Experimental Pathology.</i> |
| BALDUIN H. LUCKE, M.D. | <i>Instructor in Pathology.</i> |
| S. P. REIMANN, M.D. | <i>Instructor in Pathology.</i> |
| HAROLD W. HOW, M.D. | <i>Assistant Instructor in Pathology.</i> |
| JOHN EIMAN, M.D. | <i>Assistant Instructor in Pathology.</i> |
| MORTON MCCUTCHEON, M.D. | <i>Assistant Instructor in Pathology.</i> |
| ERWIN F. FABER | <i>Instructor in Drawing.</i> |

SURGICAL PATHOLOGY.

| | |
|--------------------------------|---|
| JOHN SPEESE, M.D. | <i>Instructor in Surgery and Associate in Surgical Pathology.</i> |
| HENRY P. BROWN, JR., M.D. | } <i>Assistant Instructors in Surgical Pathology.</i> |
| NORMAN S. ROTHSCHILD, M.D. ... | |

*On national duty in Navy.

NEUROPATHOLOGY.

| | |
|-------------------------------|---|
| WILLIAM G. SPILLER, M.D. | <i>Professor of Neurology.</i> |
| S. D. LUDLUM, M.D. | <i>Associate in Neuropathology.</i> |
| WILLIAMS B. CADWALADER, M.D.. | } <i>Instructors in Neuropathology.</i> |
| GEORGE WILSON, M.D. | |
| JOSEPH McIVER, M.D. | |
| ANDREW H. WOODS, M.D. | |

GYNECOLOGIC PATHOLOGY.

| | |
|------------------------------|--|
| JOHN G. CLARK, M.D. | <i>Professor of Gynecology.</i> |
| CHARLES C. NORRIS, M.D. | <i>Assistant in Gynecological Pathology.</i> |

OPHTHALMIC PATHOLOGY.

| | |
|--------------------------------|--|
| GEORGE E. DE SCHWEINITZ, M.D.. | <i>Professor of Ophthalmology.</i> |
| HAROLD W. HOW, M.D. | <i>Assistant in Ophthalmic Pathology</i> |

Instruction in Pathology extends over the second, third and fourth years of the medical curriculum. The plan of instruction embraces a general course in pathology under the direct supervision of the chair of pathology, and a group of courses of applied special pathology, limited to the third or fourth year, in charge of the staff of instructors of the clinical branches concerned. In this latter group, which looks eventually toward the presentation of all special applications advantageously taught by laboratory methods, there have thus far been organized laboratories of Surgical Pathology, Neuropathology, Gynecologic Pathology and Ophthalmic Pathology. In each division of the subject, except the last named, the plan of teaching includes systematic lectures, demonstrations and practical class exercises.

The general instruction in pathology includes the following courses, of which I to IX, inclusive, are required of candidates for the degree of Doctor of Medicine:

SECOND YEAR.

| | Hours |
|---|-------|
| I. LECTURES. <i>Professor McFarland.</i> —Four times a week for sixteen weeks on general pathology..... | 64 |
| II. LECTURES. <i>Professor Smith.</i> —Two hours a week for sixteen weeks, on systemic pathology and animal parasitology..... | 32 |
| III. DEMONSTRATIONS AND CONFERENCES. <i>Professor Smith.</i> —One hour, once a week, for thirty-two weeks | 32 |
| IV. LABORATORY. <i>Pathological Staff.</i> —Three hours, twice a week | 192 |

THIRD YEAR.

Hours

| | |
|---|----|
| V. LECTURES. <i>Professor Smith</i> .—Two hours a week on systemic pathology | 64 |
| VI. DEMONSTRATIONS IN GROSS MORBID ANATOMY. <i>Pathological Staff</i> .—Two hours, once a week..... | 64 |
| VII. AUTOPSIES. Each student must, by the State Law, attend at least six, but as a matter of fact each student attends from fifteen to twenty. In small sections. | |
| VIII. NEUROPATHY. <i>Professor Spiller and Drs. Ludlum, Leopold and Cadwalader</i> .—In sections. Two hours a week, once a weeks, for eight weeks, for each student | 16 |
| IX. CLINICAL PATHOLOGY. See under Medicine. | |

FOURTH YEAR.

| | |
|--|----|
| X. DEMONSTRATIONS IN SURGICAL PATHOLOGY. <i>Dr. Speese and Assistants</i> .—In sections. Two hours, once a week, for ten weeks, for each student | 20 |
| XI. ADVANCED WORK. | |
| XII. GYNECOLOGIC PATHOLOGY. <i>Dr. C. C. Norris</i> . | |
| XIII. OPHTHALMIC PATHOLOGY. | |

Courses I, II, III, IV and V are devoted to the various retrograde and progressive elementary pathological processes, to regeneration, inflammation, the specific inflammations, tumor formation and to teratology. In the laboratory of pathological histology, each student devotes two periods of three hours each week to the study of illustrative tissues by the microscope, the gross features of the processes discussed being correlated by frequent demonstrations of material in the laboratory or in lectures. The projection microscope is employed as an additional means of demonstration of the histological preparations, the essential features of each lesion being pointed out upon the screen to the student at the beginning of the study period.

Instruction in the special pathology of the various organs, with particular reference to the pathological physiology of each and the development of symptoms of disease, is taken up systematically in lectures in the second half of the second year and continued through the third year. This is preceded by a lecture and demonstrative course upon animal parasitology. In the laboratory of pathological histology the minute changes of the more important diseases of each organ are studied in as close relation as possible with the lecture instruction. At the same time brief demonstrations of the gross

appearances of the diseased organs are made; and whenever profitable experimental work is introduced for the elucidation of special problems. A brief course, largely demonstrative and individual, upon the principles of immunity and serum diagnosis is included in this course.

In Course VI during the third year each student studies the accumulated autopsy material and especially selected and museum preparations, systematically and by the "case" method.

In Course VII the class is divided into small sections, and as autopsies are being performed in the University Hospital and Philadelphia General Hospital, the students are required to attend, and participate in the work. In the fourth year the students of the various ward classes in the University Hospital attend the autopsies upon those subjects with whose clinical course each class has been familiar in the wards; special instruction, attempting to correlate the pathological findings with the known symptoms of the case in life, being given. Opportunity for the completion of such investigation by histological and bacteriological methods is afforded the student in the laboratories of the department.

VIII. NEUROPATHOLOGY. See also Neurology.

IX. CLINICAL PATHOLOGY. See under Medicine.

X. SURGICAL PATHOLOGY. See also Surgery.

Dr. Speese.—Demonstrations of charts, gross specimens and microscopic specimens. This course is supplemental to Dr. Müller's lectures, and aims to present specimens illustrative of the principal surgical diseases. The following subjects are among those demonstrated: repair of wounds, suppuration, abscess, gangrene, ulcer, fistula, sinus, diseases of the thyroid, salivary and mammary glands; repair after fracture, diseases of bones, joints, ligaments, bursæ; disease of the digestive tract, including the lip, tongue, stomach, gall bladder, liver, pancreas, intestine, appendix and rectum; diseases of the kidney, ureter, bladder, prostate, penis, scrotum and testicle; tumors about the jaw, connective tissue tumors, epithelial skin tumors; diseases of the lymphatic system.

XI. ADVANCED WORK. With the increased space and added facilities afforded by the McManes Laboratory of Pathology the department offers to advanced and post-graduate students special instruction in experimental pathology, immunology and serum diagnosis, animal parasitology, pathological histology, museum and autopsy work; and opportunity is afforded those suitably trained to undertake special investigation.

In addition to the above, work is presented by the various clinical groups in the special departments of the McManes Laboratory of Pathology (the Courses XII and XIII are not given to undergraduate classes except in small groups optionally).

PHARMACOLOGY.

- ALFRED N. RICHARDS, PH.D.....*Professor of Pharmacology.*
 HORATIO C. WOOD, JR., M.D.....*Professor of Pharmacology and Therapeutics.*
 OSCAR H. PLANT, M.D.....*Professor of Pharmacology.*
 ARTHUR H. HOPKINS, M.D.....*Instructor in Practical Therapeutics.*
 CARL F. SCHMIDT, M.D.*Instructor in Pharmacology.*

Instruction in pharmacology is given during the second and third years and is required of all candidates for the degree of Doctor of Medicine.

SECOND YEAR.

| | Hours |
|---|-------|
| LECTURES. <i>Professor Richards and Professor Plant.</i> —Twice a week | 64 |
| CONFERENCES. <i>Professor Plant and Dr. Schmidt.</i> —In sections. Once a week, for each student | 32 |
| LABORATORY COURSE IN MATERIA MEDICA AND PHARMACY. <i>Professors Richards, Plant and Dr. Schmidt.</i> —In sections. Three hours, twice a week, for ten weeks, November 4 to January 24, for each student | 60 |
| LABORATORY COURSE IN PHARMACOLOGY. <i>Professors Richards, Plant and Dr. Schmidt.</i> —In sections. Three hours, once a week, second half year, for each student | 48 |

THIRD YEAR.

| | |
|---|----|
| PRACTICAL THERAPEUTICS. <i>Dr. Hopkins.</i> —In sections. One hour, once a week during first half year; two hours, once a week, during second half year, for each student | 48 |
|---|----|

SECOND YEAR. In the lectures the physiological action of the important drugs is systematically considered, emphasis being laid upon those features in action which are of importance in relation to therapeutic use or toxicological effect.

The conferences are devoted to informal discussion of the subjects studied in lectures and text-book.

The laboratory work of the first half year includes the practical study of the general physical and chemical properties of the active constituents of drugs; practice in pharmaceutical methods of manufacture, at least one sample of each type of pharmacopœial preparations being made by each student; the study of incompatibilities and of prescription compounding. Together with this work in the laboratory the subject of prescription writing is taken up, the student being required to write each week a number of prescriptions, including substances and preparations already studied in the laboratory. A portion of each laboratory period is devoted to criticism of these prescriptions with demonstrations.

The laboratory work of the second half year is devoted to the practical study of drug action. Each section of the class is subdivided into groups of two, three or four students as occasion demands, and each of these smaller groups, under adequate supervision, performs experiments which demonstrate the action exerted by drugs upon the important physiological mechanisms—nervous system, respiration, circulation, kidney, gastro-intestinal tract, etc. Important experiments which cannot be successfully performed by students are shown in demonstration.

THIRD YEAR. PRACTICAL THERAPEUTICS. In this course pharmacology is studied in relation to definite problems in the treatment of disease. Cases from the medical wards of the University Hospital are presented in clinic, the important features in the history and physical examination are briefly discussed and the student is required to plan drug treatment based, in so far as possible, upon the known action of the drugs which might be chosen and the nature of the conditions to be treated, and to write the prescriptions and instructions covering it. These outlines and prescriptions are critically discussed in the light of the results of the treatment which was actually applied, and from time to time, the cases again are brought before the class for further observation and discussion as to progress and modification of treatment.

FOURTH YEAR. An elective course is offered by Professor H. C. Wood, Jr., on treatment of inflammations of mucous membranes, including practical management of certain common diseases, together with experience in prescription writing.

RESEARCH. The research laboratories of the department are open to a limited number of qualified workers. Research in pharmacology may be chosen by students of the fourth year in fulfillment of the elective requirements of that year.

TOXICOLOGY.

| | |
|---------------------------|---|
| JOHN MARSHALL, M.D. | <i>Professor of Chemistry and Toxicology.</i> |
| LEON A. RYAN, Ph.D. | <i>Assistant Professor of Chemistry and Toxicology.</i> |
| HENRY E. STARR, B.S. | <i>Instructor in Chemistry and Toxicology.</i> |

SECOND YEAR.

Hours

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| LECTURES. <i>Professor Marshall.</i> —Once a week, second half year | 16 |
| LABORATORY. <i>Professor Marshall, Assistant Professor Ryan and Mr. Starr.</i> —Two and a half hours, once a week, second half year | 40 |

The laboratory course includes principally the application of qualitative chemical tests to individual poisons and also their separation and identification, from foodstuffs and animal tissues. The identification of blood stains on fabrics, etc., is also part of the course. Especial attention is devoted to the medico-legal aspects of the subject.

MEDICINE.

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| ALFRED STENGEL, M.D., Sc.D. | <i>Professor of Medicine.</i> |
| DAVID RIESMAN, M.D. | <i>Professor of Clinical Medicine.</i> |
| JOSEPH SAILER, M.D. | <i>Professor of Clinical Medicine.</i> |
| M. HOWARD FUSSELL, M.D. | <i>Professor of Applied Therapeutics</i> |
| GEORGE W. NORRIS, M.D. | <i>Assisant Professor of Medicine.</i> |
| H. R. M. LANDIS, M.D. | <i>Assisant Professor of Medicine.</i> |
| O. H. PERRY PEPPER, M.D. | <i>Assistant Professor of Medicine.</i> |
| ARTHUR A. STEVENS, M.D. | <i>Lecturer on Medicine.</i> |
| B. FRANKLIN STAHL, M.D. | <i>Lecturer on Dietetics of the Sick.</i> |
| HERMAN B. ALLYN, M.D. | } <i>Associates in Medicine.</i> |
| ALBERT P. FRANCINE, M.D. | |
| E. H. GOODMAN, M.D. | |
| GEORGE MORRIS PIERSOL, M.D. ... | |
| J. H. MUSSER, JR., M.D. | |
| CLIFFORD B. FARR, M.D. | |
| ROBERT G. TORREY, M.D. | |
| THOMAS C. KELLY, M.D. | |
| T. GRIER MILLER, M.D. | |
| ARTHUR H. HOPKINS, M.D. | |
| ARTHUR C. MORGAN, M.D. | |
| L. NAPOLEON BOSTON, M.D. | |

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| JOHN M. CRUICE, M.D. | } <i>Instructors in Medicine.</i> |
| THOMAS A. COPE, M.D. | |
| FRANK A. CRAIG, M.D. | |
| C. M. MONTGOMERY, M.D. | |
| WARD BRINTON, M.D. | |
| TRUMAN G. SCHNABEL, M.D. | |
| JAMES A. SMITH, M.D. | |
| ISADORE KAUFMAN, M.D. | |
| CHARLES C. WOLFERTH, M.D. | |
| RICHARD KERN, M.D. | |
| THOMAS KLEIN, M.D. | |
| ANDREW CALLAHAN, M.D. | |
| J. HOWARD SMITH, M.D. | |
| J. C. DOANE, M.D. | |
| D. P. MURPHY, M.D. | |
| SIMON S. LEOPOLD, M.D. | <i>Instructor in Clinical Pathology.</i> |
| H. B. WILMER, M.D. | } <i>Assistant Instructors in Medicine.</i> |
| GEORGE WILSON, M.D. | |
| DAVID L. FARLEY, M.D. | |
| ARTHUR W. PHILLIPS, M.D. | |
| SAMUEL H. KOHLMAN, M.D. | |
| WILLIAM HEWSON, M.D. | |
| MARION REA LUCKE, M.D. | |
| BENJAMIN M. MCINTIRE, M.D. .. | |

SECOND YEAR.

Hours

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| LECTURES AND DEMONSTRATIONS ON PHYSICAL DIAGNOSIS. <i>Assistant Professor Norris</i> .—Once a week, second half year | 16 |
| PRACTICAL WORK IN PHYSICAL DIAGNOSIS. <i>Assistant Professor Norris and Assistants</i> .—In sections. Two hours a week, for second half year, for each student | 32 |

THIRD YEAR.

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| LECTURES. <i>Professor Stengel</i> .—To third and fourth year classes combined. Once a week | 32 |
| CLINICAL LECTURES. <i>Professor Stengel</i> .—Once a week | 32 |
| OBSERVATION CLASSES. <i>Dr. Stevens</i> .—Once a week, first half year | 16 |
| PRACTICAL WORK IN MEDICAL DISPENSARY. <i>Dr. Musser and Assistants</i> .—In sections. For each student | 120 |
| MEDICAL TECHNIC. One hour a week for second half year | 16 |
| LECTURES ON APPLIED THERAPEUTICS. <i>Professor Fussell</i> .—Twice a week | 64 |

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| MEDICAL CLINICS. <i>Assistant Professors Landis and O. H. P. Pepper.</i> —Once a week | 32 |
| WARD WORK IN TUBERCULOSIS. <i>Professor Landis and Assistants.</i> | |
| Phipps Institute | 16 |
| PHILADELPHIA HOSPITAL. <i>Dr. A. C. Morgan and Assistants.</i> ... | 16 |
| LECTURES ON CLINICAL PATHOLOGY. <i>Dr. Cope.</i> —Once a week... | 32 |
| LABORATORY COURSE IN CLINICAL PATHOLOGY. <i>Dr. Cope and Assistants.</i> —In sections. Two hours a week for each student | 64 |
| LECTURES ON DIETETICS OF THE SICK. <i>Dr. Stahl.</i> —Once a week, second half year | 16 |
| EXTRAMURAL CLINICS. Philadelphia General and Pennsylvania Hospitals on Saturday mornings. | |

FOURTH YEAR.

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| LECTURES. <i>Professor Stengel.</i> —To third and fourth year classes combined. Once a week | 32 |
| CLINICAL CONFERENCES. <i>Professors Stengel, Riesman and Sailer.</i> | |
| —Three times a week | 112 |
| WARD CLASSES. <i>Drs. Stevens, Allyn and Morgan.</i> —Philadelphia General Hospital. In sections. For three weeks, for each student | 8 |
| WARD WORK. <i>Assistant Professor O. H. Pepper, Drs. Miller and Wolferth.</i> University Hospital. In sections. For five weeks, for each student | 140 |
| WARD WORK.. <i>Professors Riesman and Sailer, Drs. Farr and Piersol.</i> —Philadelphia General Hospital. For five weeks, for each student | 75 |
| APPLIED THERAPEUTICS. <i>Professor Fussell.</i> In sections. Once a week, for five weeks, for each student | 10 |

OUTLINE.

SECOND YEAR.

PHYSICAL DIAGNOSIS.—*Assistant Professor Norris* gives lectures and demonstrations on physical diagnosis during the second half of the year. These are devoted to an exposition of the general principles of the subject rather than to a study of the physical signs in special diseases.

In addition to the lectures, each student has practical work under Dr. Norris and his assistants, the class being divided into small sections. These classes are devoted almost entirely to normal condi-

tions, the signs of disease being used only as an occasional contrast to the normal, the actual study of signs of special diseases being carried out in the third year.

THIRD YEAR.

SYSTEMATIC LECTURES.—*Professor Stengel* lectures to the third and fourth year classes combined, once a week. These lectures are intended as a general exposition of the relations of the fundamental sciences to practical medicine with a sufficient systematic description of diseases to furnish a basis for further study. In addition to the lectures, topics for reading are assigned, so that the student may be guided in his work.

CLINICAL LECTURE.—*Professor Stengel* also conducts for the third year class once a week, a medical clinic illustrating the topics discussed in the general lecture.

OBSERVATION CLASSES.—*Dr. Stevens* conducts these classes, with the special purpose of training the student's powers of observation in recognizing the meaning of the objective signs of disease.

MEDICAL DISPENSARY.—The class is divided into small sections and assigned to the Instructors in the Medical Dispensary.—*Dr. Musser and his Assistants.* The students take histories of new cases, make physical examinations and assist in the work of the Dispensary. Demonstrations of selected cases are made by the Instructors and various methods of clinical investigation are carried out with the assistance of the students.

One hour each week the whole class divided into sections meets Drs. Piersol, Goodman or Musser in the Medical Dispensary for special demonstrations designed to aid them in their individual work just described.

Besides the regular work, many students avail themselves of the opportunities offered to act as clerks in the Dispensary of the University Hospital throughout the year, and in the same place or elsewhere during vacations.

APPLIED THERAPEUTICS.—*Professor Fussell* lectures with illustrative cases as the basis of discussion of methods of treatment. All forms of medical and non-medical therapeutics are discussed and as far as possible demonstrated before the students.

MEDICAL CLINICS.—*Asst. Prof. Landis and Dr. O. H. P. Pepper* conduct clinics at the University Hospital. These are designed to advance the clinical experience of the students after the systematic lectures and dispensary work have prepared them for further clinical work.

TUBERCULAR CLASSES.—*Assistant Professor Landis and Assistants* meet one section (one-quarter) of the class at the Phipps Institute; and *Dr. A. C. Morgan and Assistants* another section at the Philadelphia Hospital, for practical instruction in the diagnosis and treatment of tuberculosis.

CLINICAL LABORATORY COURSE.—*Dr. Thos. A. Cope* gives a lecture and demonstration, and conducts the laboratory exercises. In these the class is divided into sections, each section receiving instruction and practice in the methods of chemical and microscopical examination of the urine, blood, sputum, stomach contents, feces, etc.

DIETETICS OF THE SICK. *Dr. B. Franklin Stahl.*—Lectures are given with the purpose of providing the students an understanding of foods and their composition and preparation, and demonstrations are held on the methods of preparing various foods suitable for different individuals, the demonstrations being made sufficiently elementary to be readily comprehended and remembered, and to illustrate the influence of cooking upon the food selected. The dietetic treatment of the various diseases is later taken up. The diet in disease is illustrated by showing trays of foods prepared for patients suffering from diseases under consideration, and thus practical lessons are provided exhibiting the variety of diet that may be secured from a limited number of food materials.

FOURTH YEAR.

SYSTEMATIC LECTURES. (See Third Year.)

CLINICAL CONFERENCES.—*Professors Stengel, Riesman and Sailer* take up, in a systematically subdivided course, the discussion of all the important medical conditions, so that the whole subject may be illustrated so far as this is feasible—dangerously contagious diseases and others that do not occur in this region being, of course, excepted.

In these conferences, held both in the University and the Philadelphia Hospitals, students who have studied the cases in the wards are called to the bedside before the class and discuss the cases with the lecturer, and at times contribute short papers on specially assigned subjects.

In all the above classes the students in charge of the case are required to report completely on the case in hand, including the history and general examination and any desirable clinical laboratory findings, the examination of the blood and urine being always required.

The conferences deal especially with questions of diagnosis or treatment.

WARD CLASSES.—*Drs. Stevens, Allyn and Morgan* meet sections twice weekly at the Philadelphia Hospital in advanced ward classes which deal especially with differential diagnosis and treatment.

WARD WORK. The medical ward work is arranged in periods of five weeks' continuous service in the medical wards at the University Hospital and five weeks at the Philadelphia Hospital.

Professor Fussell meets small sections for bedside discussion of practical therapeutics.

At the University Hospital there are regular ward rounds on four days of the week by Professor Stengel and Assistant Professor O. H. P. Pepper, Drs. Miller and Wolferth, and at the Philadelphia Hospital by Professors Riesman and Sailer, and Drs. Farr and Piersol. Some or all of these teachers and additional assistants are in the wards practically all of each morning, and the students are thus under supervision constantly, and advice is always at hand; but their work is done by themselves and at the ward rounds reports are made to the instructor of the nature, progress, etc., of each case by the student assigned to it, each student having several cases under his care. The group have opportunity to see all special kinds of treatment practiced in the ward and to follow, and to some extent to suggest, the treatment of the cases under observation.

Each student thus gets three months' experience in the medical wards, working three to five hours daily, which is comparable to that of a hospital interne, with the addition of constant aid and advice from senior instructors.

LABORATORY WORK. Each student of the fourth-year class is supplied with a working place in the Clinical Laboratory, which is immediately adjacent to the hospital wards, where he is furnished with a locker containing all necessary apparatus. He is required to make routine examinations, in which assistance is available when needed, of all material from patients assigned to him in any of the departments during his final year. The laboratory is open at all times during the day, and the student has access to his working place at any leisure time for such work, or for any other laboratory work that he may desire to carry out.

OTHER EXTRAMURAL TEACHING. The roster is arranged so that the students of the third year class are free to attend the medical clinics at the Pennsylvania or Philadelphia Hospitals on Saturdays. Other medical clinics may also be attended by the members of the same class, and volunteer work in connection with various other hospitals is easily secured, particularly during vacation.

CLINICO-PATHOLOGICAL DEMONSTRATIONS. All autopsies held at the

University Hospital will be attended by the students on duty in the ward in which the case under examination occurred. The pathologist conducts the autopsy, the clinicians in charge of the case first explaining the clinical aspects of the condition.

PEDIATRICS.

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| J. P. CROZER GRIFFITH, M.D. | <i>Professor of Pediatrics.</i> |
| THOMPSON S. WESTCOTT, M.D. | } <i>Associates in Pediatrics.</i> |
| MAURICE OSTHEIMER, M.D. | |
| CHARLES A. FIFE, M.D. | |
| HOWARD C. CARPENTER, M.D. | |
| J. CLAXTON GITTINGS, M.D. | } <i>Instructors in Pediatrics.</i> |
| A. GRAEME MITCHELL, M.D. | |
| WILLIAM N. BRADLEY, M.D. | |

THIRD YEAR.

Hours

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| LECTURES. <i>Drs. Ostheimer, Fife, Carpenter and Gittings.</i> —Once a week for second half year | 16 |
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FOURTH YEAR.

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| LECTURES. <i>Professor Griffith.</i> —Once a week | 32 |
| WARD CLASSES AND DISPENSARY WORK. <i>Drs. Ostheimer, Fife, Carpenter, Mitchell and Bradley.</i> —In sections. Five times a week, for each student | 15 |
| WARD WORK. <i>Drs. Fife, Carpenter and Gittings.</i> —In sections. Two hours a week, for five weeks, for each student | 10 |

The course in Pediatrics consists of lectures, ward classes and ward work in the University Hospital, the Children's Hospital and the Philadelphia Hospital.

The lectures are conducted by the Professor of Pediatrics in the medical amphitheatre of the University Hospital once a week. Special lectures are given upon the general diagnosis, symptomatology and treatment of disease in children. The more important subjects receive systematic and full discussion, and an effort is made so to select these that the instruction by the assistant teachers will not be unnecessarily duplicated. By this arrangement as great a number of topics as possible is considered during the course. The feeding of

infants receives especial attention. In addition to this, the Children's Ward and Dispensary are drawn upon for clinical lectures on the various diseases presenting themselves.

The ward classes are conducted at the University Hospital by Dr. Ostheimer, at the Children's Hospital by Drs. Carpenter, Gittings and Mitchell, and at the Philadelphia Hospital by Drs. Fife and Bradley. Subsections of the class, consisting of from eight to fifteen students, attend these ward classes five times a week and have the opportunity of examining the patients under the direction of the instructor, and in addition learn the practical management of the diseases of children as conducted in the Hospital wards. In addition to the work mentioned, the students, in small groups, are assigned personal supervision of certain cases in the wards in the University Hospital, making daily observations of them and attending the ward visits of the assistant pediatric physicians, Drs. Ostheimer, Gittings, Fife and Carpenter.

PHYSICAL THERAPY.

R. TAIT MCKENZIE, B.A., M.D. *Professor of Physical Therapy.*

Instruction in this subject consists of a course of lectures upon the application of massage, muscular re-education, electricity, hydrotherapy, heat and light, in the treatment of disease.

These lectures begin in November and are given twice a week during the term at the Medical laboratories or the University Hospital to members of the second-year class.

The practical work and demonstrations are given in the Department of Physical Therapy in the University Hospital.

SECOND YEAR.

Hours

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| LECTURES AND DEMONSTRATIONS ON PHYSICAL THERAPY. <i>Professor McKenzie.</i> —One hour, twice a week, for twelve weeks | 24 |
| DEMONSTRATIONS ON ELECTROTHERAPY. <i>Dr. Wm. T. Johnson.</i> —Included in the above twenty-four hours. | |
| DEMONSTRATIONS ON HYDROTHERAPY AND THERMOTHERAPY. <i>Dr. Nylin.</i> —In sections. Six hours for each student, included in above twenty-four hours. | |

SURGERY.

JOHN B. DEAVER, M.D.....JOHN RHEA BARTON *Professor of Surgery.*

CHARLES H. FRAZIER, M.D.....*Professor of Clinical Surgery.*

HENRY K. PANCOAST, M.D.*Professor of Roentgenology.*

J. EDWIN SWEET, M.D.....*Professor of Surgical Research.*

ALFRED C. WOOD, M.D.....*Assistant Professor of Surgery.*

JOHN B. CARNETT, M.D.....

JOHN H. JOPSON, M.D.

GEORGE P. MÜLLER, M.D.

T. TURNER THOMAS, M.D.

ELDRIDGE L. ELIASON, M.D.

GEORGE G. ROSS, M.D.

DAMON B. PFEIFFER, M.D.

A. P. C. ASHHURST, M.D.

GEORGE M. LAWS, M.D.

A. D. WHITING, M.D.

JOHN SPEESE, M.D.

THOMSON F. EDWARDS, M.D.

RUTHERFORD L. JOHN, M.D.

HENRY WINSOR, M.D.

H. P. BROWN, M.D.

DAVID HUSTON, M.D.

ISADOR RAVDIN, M.D.

JOHN ALEXANDER, M.D.

EDWARD T. CROSSAN, M.D.

DRURY HINTON, M.D.

RALPH GOLDSMITH, M.D.

SAMUEL STURGIS, M.D.

Associates in Surgery.

Instructors in Surgery.

Assistant Instructors in Surgery.

SECOND YEAR.

Hours

SURGICAL THERAPEUSIS (non-operative). *Dr. Whiting.*—Once a week 32

BANDAGING, EMERGENCY TREATMENT, ELEMENTARY FRACTURE DRESSING. *Dr. Ravdin.*—In sections. Second half year. Two hours a week for each student 32

THIRD YEAR.

LECTURE ON ROENTGENOLOGY. *Professor Pancoast.*—Once a week 32

LECTURE. *Asst. Prof. Wood.*—Once a week 32

LECTURE. *Dr. Müller.*—Once a week 32

Hours

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| NON-OPERATIVE CLINIC. <i>Dr. Ross.</i> —Once a week | 32 |
| MINOR SURGERY AND FRACTURE CLINICS. <i>Dr. Eliason.</i> Half year of each for each student | 32 |
| OPERATIVE SURGERY. <i>Dr. Ashhurst, assisted by Drs. Winsor, John, Brown and Crossan.</i> —Two hours twice a week for eight weeks. For each student..... | 32 |
| SURGICAL DISPENSARY. <i>Dr. Laws, assisted by Drs. Huston, Edwards, Goldsmith, Hinton and Sturgis.</i> —In sections. For each student | 38 |
| APPLIED SURGICAL ANATOMY.—See under <i>Anatomy.</i> | |

FOURTH YEAR.

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| LECTURE. <i>Professor Deaver.</i> —Once a week | 32 |
| OPERATIVE CLINIC. <i>Professor Deaver.</i> Lankenau Hospital.— In sections. One-third of class, two hours once a week, for each student | 20 |
| CLINICAL LECTURE AND OPERATIVE CLINIC. <i>Professor Deaver.</i> — In sections. Three hours, once a week, for each student.... | 30 |
| WARD CLASSES AND WARD WORK. <i>Professor Deaver, Professor Frazier, Asst. Prof. Wood; Drs. Thomas, Carnett, Müller, Ross, Pfeiffer.</i> —In sections. Five hours a week, for each student | 50 |
| CLINICAL CONFERENCES AND OPERATIVE CLINICS. <i>Professor Frazier, Asst. Prof. Wood; Drs. Thomas, Müller, Pfeiffer.</i> In sections, one-third of class. Five periods of two hours each, for each student | 100 |
| CLINICAL CONFERENCES AND OPERATIVE CLINICS. <i>Drs. Carnett and Ross.</i> —In sections. Two periods of one hour each, for each student | 20 |
| MILITARY SURGERY. <i>Dr. Jopson.</i> —Second half year, one hour a week | 16 |
| SURGICAL PATHOLOGY.—See under <i>Pathology.</i> | |

The course in surgery begins in the latter half of the second year and extends throughout the third and fourth years. The fundamentals of the subject are taught by a combination of lectures, demonstrations and conferences, while the essentially practical object of surgery is recognized by bringing the student into the closest possible relation to the patient in the dispensaries and wards of the hospital. The course is graduated, beginning in the second year with the simplest methods of mechanical treatment and the applica-

tion of the fundamental sciences to surgery, then passing to a systematic study of the principles of surgery, illustrated by demonstration and discussion of concrete cases in the wards, while simultaneously in sections and under the immediate supervision of instructors, the student himself takes histories, examines, diagnoses and treats patients in the dispensaries. He learns the technic and performs representative operations on the cadaver. He observes and, in so far as material is available, assists in minor operations. In the fourth year the teaching of surgery is concentrated in such a way that one-third of the class is occupied almost exclusively with this subject for one-third of the school year and for a part of the time during the remaining two-thirds. The teaching is almost entirely carried on in the University Hospital, where the clinical material is sufficiently abundant to provide all that can be well assimilated by the student. Also, material that differs somewhat in character and range is utilized in the wards of the Philadelphia General Hospital, which is adjacent. By this method it is possible for the student, during the surgical trimester, to observe the patients before operation or other surgical treatment, to witness the treatment in the hands of his teachers, to see the after treatment and results and to examine tissues and specimens removed which are made the subject of demonstrations in surgical pathology.

Each student receives instruction and personal experience in anesthesia. The department of surgical research affords opportunity for instruction in experimental work, and a limited number of men engage in definite research under the direction of the Professor of Surgical Research.

SURGICAL ANTISEPSIS AND ASEPSIS, NON-OPERATIVE THERAPEUTICS.

Dr. Whiting.—One hour a week throughout the year. History of antiseptics and asepsis; a study of the main sources of infection in operative wounds; the classes of agents used in procuring asepsis and antiseptics; the uses and abuses of the various chemical agents; methods for cleansing the hands; field of operation; and the preparation of materials, etc.

BANDAGING, FRACTURE DRESSINGS AND FIRST-AID. *Dr. Ravidin.*—Two hours a week for half the year. The various bandages and fracture dressings are demonstrated and the students apply them to ambulatory patients in the University Hospital. The first-aid treatment of hemorrhage, shock, fractures, burns, and poisons are demonstrated whenever the material in the hospital presents itself.

PRINCIPLES OF SURGERY. *Dr. Müller.*—One hour a week throughout the year. The subjects of hemorrhage and shock, the general principles of infection, specific and non-specific infections, tumors, and the principles of regional surgery are covered.

LECTURES AND DEMONSTRATIONS. *Dr. Wood.*—One hour once a week the first half-year. Diseases of bones and joints; surgery of the extremities; amputations, etc. Anesthesia.

MINOR SURGERY. *Dr. Eliason.*—Minor surgical conditions and the application of surgical principles in the treatment. Students assist in the reduction of fractures, opening abscesses, dressing wounds, etc.

NON-OPERATIVE CLINIC. *Dr. Ross.*—One hour a week throughout the year. Patients in the surgical wards of the University Hospital are demonstrated to the class. Diagnosis, pre- and post-operative treatment and complications are discussed. Wherever possible the students come down and individually examine the lesion.

DISPENSARY SERVICE, SURGICAL DISPENSARY. *Dr. Laws, assisted by Drs. Huston, Edwards, Goldsmith, Hinton and Sturgis.*—Thirty-eight hours during the third year. Under supervision the last half hour of each day is spent in a discussion of the new and interesting cases seen that day.

OPERATIVE SURGERY. *Dr. Ashhurst, assisted by Drs. Winsor, John, Brown and Crossan.* Thirty hours during the year. The subjects covered are as follows:

1. Instruments; incisions; ligatures; knots; sutures; methods of local anesthesia; ligation of arteries.
2. Intravenous infusion; axillary infusion; hypodermoclysis; intubation of larynx; tracheotomy.
3. Surgical anatomy of limbs: location of nerves; tenotomy; tendon lengthening. Lacerated wounds: suture of muscle, tendon, and nerve; thoracotomy.
4. Amputations in general; amputation of fingers, toes, foot, leg, forearm.
5. Amputations of leg, knee, thigh, hip, elbow, arm, shoulder; endbearing stumps; cinematoplastic amputations.
6. Abdominal wall; abdominal incisions. Hernia: inguinal, femoral, umbilical.
7. Intestinal localization; appendicitis; intestinal suture and anastomosis.
8. Gastrostomy; gastro-jejunostomy; cholecystotomy; cholecystectomy; choledochotomy; colostomy.

9. Cranio-cerebral topography; fractures of skull; trephining; middle meningeal hemorrhage; peripheral operations for trifacial neuralgia.
10. Nephrotomy; nephrectomy; mastoid operation; laminectomy; lumbar spine puncture.
11. Operations on tumors; carcinoma of lip and tongue; carcinoma of breast.
12. Hemorrhoids; fistula in ano; circumcision; varicocele; castration.
13. Urethral sounds and catheters; suprapubic cystotomy, and prostatectomy; external perineal urethrotomy with a guide (Symes operation); external perineal urethrotomy without a guide ("perineal section"); tapping urethra at apex of prostate (Cock's operation); perineal prostatectomy.
14. Thyroid operations: ligations; lobectomy; excisions of elbow, knee, shoulder.
15. Examination.

LECTURES IN GENERAL SURGERY. *Dr. Deaver and Staff.*—One hour once a week throughout the year. The subject is covered systematically, and wherever possible lantern slide demonstrations are given to illustrate the subject.

WARD WORK AND OPERATIVE CLINICS. *Drs. Deaver, Frazier, Wood, Carnett, Müller, Thomas, Ross and Pfeiffer.*

Daily during the surgical trimester in the fourth year, one hour or more is devoted to instruction by groups of not exceeding fifteen students. Histories are taken and laboratory examinations made upon new cases as assigned. Cases are reviewed and discussed in the wards. Dressings are done at this time and are made the subject of demonstration and critical consideration. Enteroclysis, venoclysis, hypodermoclysis, enemas, paracentesis, lavage and other ward activities are employed to familiarize the student with their technic and indications. Following the ward work the operations for the day are demonstrated to the entire group in informal clinic with suggested commentary on diagnosis and treatment. Occasional systematic discussions of important conditions are given. After a preliminary period of observation the student is required to give anesthetics in at least six cases under the supervision of the official anesthetists. All operative clinics are at the University Hospital with the exception of one weekly clinic in general surgery by Professor Deaver at the Lankenau Hospital.

In order to employ the clinical material to the best advantage, the operative work in the University Hospital has been assigned to the various members of the Staff by regions or fields. The present arrangement is as follows:

GENERAL SURGERY. *Dr. Deaver.*

HEAD, NECK, SPINE, NEUROLOGICAL AND GOITRE. *Dr. Frazier.*

DISEASES OF BONES AND JOINTS, BLOOD AND LYMPH VASCULAR SYSTEMS, AND MISCELLANEOUS. *Dr. Wood.*

HEAD (NON-NEUROLOGICAL), NECK, CHEST AND BREAST. *Dr. Müller.*

INDUSTRIAL SURGERY. *Dr. Carnett.*

FRACTURES (OPERATIVE) AND DISLOCATIONS. *Dr. Thomas.*

MINOR SURGERY AND FRACTURES. *Dr. Eliason.*

HERNIA. *Dr. Ross.*

ABDOMEN AND RECTUM. *Dr. Pfeiffer.*

AMBULATORY AND DISPENSARY SURGERY. *Dr. Laws.*

ORTHOPEDIC SURGERY.

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| | <i>Professor of Orthopedic Surgery.</i> |
| JAMES K. YOUNG, M.D..... | <i>Associate Professor of Orthopedic Surgery.</i> |
| WALTER G. ELMER, M.D. | } <i>Instructors in Orthopedic Surgery.</i> |
| WILLIAM JACKSON MERRILL, M.D. ... | |
| DEFOREST P. WILLARD, M.D..... | |
| CLEMENT R. BOWEN, M.D. | <i>Assistant Instructor in Orthopedic Surgery.</i> |

THIRD YEAR.

DRS. ELMER, MERRILL AND WILLARD.

A systematic course of didactic and clinical lectures is given throughout the first term, October 1st to February 1st, one hour a week. These lectures are designed to cover the whole field of Orthopedic Surgery in theory and practice.

In addition to this, the Third Year Class is divided into small sections for practical instruction in the Orthopedic Dispensary, which is given daily from the beginning of October to the end of May by Drs. Elmer, Merrill, Willard and Bowen.

This includes the study of the individual patients, outlining the treatment, the fitting of braces, application of plaster of Paris jackets, hip casts, etc., examination of X-ray plates, and demonstrations in the Orthopedic Gymnasium, which is in daily operation.

FOURTH YEAR.

An advanced course in Operative Orthopedic Surgery is offered to the Fourth Year Students in each elective trimester, Drs. Elmer, Merrill and Willard each teaching throughout one trimester.

The students are taught the various operations, transplanting of tendons, plastic operations upon tendons, osteotomy, arthrodesis, bone grafting, operations for wry neck, treatment of club foot, congenital dislocation of the hip, internal derangement of the knee joint, acute epiphysitis and osteomyelitis, etc. Special attention is given to the surgery of infantile paralysis, and also advanced instruction in the more difficult cases of scoliosis.

The students are given an opportunity from time to time to assist in the operations, and a general discussion always follows the operations.

GENITO-URINARY SURGERY.

THOMAS R. NEILSON, M.D. *Professor of Genito-Urinary Surgery.*

E. HOLLINGSWORTH SITER, M.D. *Instructor in Genito-Urinary Surgery.*

| | |
|------------------------------|---|
| W. H. MACKINNEY, M.D. | } <i>Assistant Instructors in Genito-Urinary Surgery.</i> |
| J. LEON HERMAN, M.D. | |
| ALEXANDER RANDALL, M.D. | |
| P. S. PELOUZE, M.D. | |

THIRD YEAR.

Hours

DISPENSARY WORK. *Professor Neilson and Assistants.*—In sections, averaging for each student..... 38

FOURTH YEAR.

LECTURES. *Professor Neilson.*—Once a week, first half year.... 16

WARD CLASSES. *Professor Neilson and Assistants.*—In sections.

Two hours, twice a week, for ten weeks, for each student.. 40

Small sections of the Third Year Class are assigned daily to the Genito-Urinary Dispensary for practical instruction.

A systematic course of lectures is given, covering the surgical diseases and injuries of the genito-urinary organs, including the venereal diseases.

Ward classes, for which the class is divided into sections, are held throughout the year. The students are afforded excellent oppor-

tunity to become familiar with the methods of diagnosis and treatment of diseases of the genito-urinary apparatus by personal observation, and by practical work under the guidance of the teachers. House cases requiring operation are operated on by the professor or assistants before the class.

Subsections of the class for elective work receive instruction four times a week from Drs. Siter, Mackinney, Herman, Randall and Pelouze in the Venereal Wards of the Philadelphia General Hospital or the Genito-Urinary Dispensary of the University Hospital. The rich and abundant material at hand offers to the student unsurpassed opportunities for observation and study.

GYNECOLOGY.

| | |
|--------------------------------|-------------------------------------|
| JOHN G. CLARK, M.D. | <i>Professor of Gynecology.</i> |
| BROOKE M. ANSPACH, M.D. | <i>Associate in Gynecology.</i> |
| CHARLES C. NORRIS, M.D. | } <i>Instructors in Gynecology.</i> |
| FLOYD E. KEENE, M.D. | |
| FRANK B. BLOCK, M.D. | } <i>Assistant Instructors in</i> |
| THOMAS H. LLEWELLYN, M.D. | |
| | <i>Gynecology.</i> |

The instruction in Gynecology extends throughout the third and fourth years and comprehends:

THIRD YEAR.

Hours

| | |
|--|----|
| I. RECITATION AND LANTERN DEMONSTRATIONS. <i>Professor Clark.</i> —Once a week | 32 |
|--|----|

FOURTH YEAR.

| | |
|--|----|
| II. CLINICAL WARD CLASSES. <i>Professor Clark and Drs. Anspach, Norris and Keene.</i> —In sections. Two hours, three times a week, for ten weeks, for each student | 60 |
| III. CLINICAL CONFERENCE. <i>Drs. Norris and Keene.</i> —In sections. Once a week, for ten weeks, for each student | 10 |
| IV. GYNECOLOGICAL PATHOLOGY. <i>Dr. Norris.</i> —This is an elective course for special students. | |
| V. GYNECOLOGICAL DIAGNOSIS. <i>Drs. Llewellyn and Block.</i> —Elective course for limited number of students in Gynecological Dispensary. | |

THIRD YEAR.

I. RECITATIONS AND LANTERN DEMONSTRATIONS. Devoted either to recitations or to lantern demonstrations by Professor Clark. It is intended that the demonstrations shall fully supplement the recitations, thus rendering as clear as possible the histologic, anatomic,

and pathologic, as well as the operative side of Gynecology. The third-year instruction is entirely theoretic, and is intended to prepare the student for his practical work of the fourth year.

FOURTH YEAR.

II. CLINICAL WARD CLASSES. The class is divided into sections, which attend the clinical ward classes. These sections are further subdivided into small groups of students who see all cases with the professor or instructors before any plan of treatment is instituted. The history of the case is carefully reviewed; and, instead of the usual clinical lecture preceding an operation, the special group of students for the day are closely quizzed on all points relative to diagnosis, treatment, and prognosis. Immediately after the operation, all points on the technique of the operation, the post-operative care of the patient, the possible complications, and the ultimate progress are fully considered.

III. CLINICAL CONFERENCE. During this Conference the clinical reporters for each ward class give in detail the histories of cases seen during the preceding week, with treatment and results. The instructor merely acts as a guide in these conferences, the students carrying the burden of the discussion.

IV. GYNECOLOGICAL PATHOLOGY. The Pathological Laboratory of the Gynecological Department will be placed at the disposal of elective students. A complete course in microscopic diagnosis will be offered. This will prove particularly valuable to those students, either undergraduate or postgraduate, who expect to take up the special study of the Diseases of Women.

V. GYNECOLOGICAL DIAGNOSIS. A limited number of students may elect this course. Comprehensive training in history taking, diagnosis, and treatment of ambulatory office cases will be given in the Gynecological Dispensary.

DERMATOLOGY.

MILTON B. HARTZELL, A.M., M.D., LL.D., *Professor of Dermatology.*
 F. C. KNOWLES, M.D. *Assistant Professor of Dermatology.*
 C. K. DENGLE, M.D. *Instructor in Dermatology.*

THIRD YEAR.

| | Hours |
|---|-------|
| LECTURES. <i>Professor Hartzell.</i> —Once a week, throughout the year | 32 |
| CLINICS. <i>Professor Hartzell.</i> —Half the class, one hour, once a week, throughout the year | 16 |

| | |
|---|----|
| WARD INSTRUCTION. <i>Professor Hartzell and Assistant Professor Knowles.</i> —In sections. One hour, once a week, for ten weeks | 10 |
|---|----|

I. LECTURES. The subject-matter is descriptive of the commoner diseases of the skin as met with in this country. The lectures are abundantly illustrated by charts, paintings, photographs, lantern slides, and wax and paper-maché models.

II. CLINICS. Cases are exhibited and commented on in such a manner as to render the clinical features of the disease plain.

III. WARD INSTRUCTION. In the wards of the Philadelphia General Hospital and in the Skin Dispensary of the University Hospital, the students thus coming in contact with cases. This is also open to the fourth-year class as an elective.

OPHTHALMOLOGY.

| | |
|-----------------------------------|--|
| GEORGE E. DE SCHWEINITZ, M.D..... | <i>Professor of Ophthalmology.</i> |
| EDWARD A. SHUMWAY, M.D. | <i>Lecturer in Ophthalmology.</i> |
| THOMAS B. HOLLOWAY, M.D. | } <i>Instructors in Ophthalmology.</i> |
| H. MAXWELL LANGDON, M.D. | |
| CARL WILLIAMS, M.D. | |
| B. F. BAER, M.D. | |
| JOHN R. FORST, M.D. | |
| W. T. CREIGHTON, M.D. | } <i>Assistant Instructors in Ophthalmology.</i> |
| ALEXANDER FEWELL, M.D. | |
| P. HOWLAND SHAW, M.D. | |

PRACTICAL WORK IN THE PHYSIOLOGICAL LABORATORY.—The second-year men are each provided with suitable appliances, an optical box, an ophthalmoscope, an artificial eye, color tests, etc., and are instructed in physiological optics and in the physiology of the eye. This course, which consists of a series of laboratory hours, is conducted by the Professor of Physiology and assistants.

The courses scheduled for all regular students are as follows:

THIRD YEAR.

| | |
|--|----|
| LECTURE DEMONSTRATIONS AND CLINICAL LECTURES. <i>Professor de Schweinitz and Dr. E. A. Shumway.</i> —Twice a week, for first half year | 32 |
| PRACTICAL WORK. <i>Ophthalmological Staff.</i> —In sections. One hour a week, for first half year, for each student | 16 |

LECTURE DEMONSTRATIONS AND CLINICAL LECTURES.—The subject covered in this course comprise the methods of examining the patient and the external examination of the eye; functional testing; diseases and injuries of the eye; the eye in its relation to general diseases; medical ophthalmoscopy and medical ophthalmology; and operative ophthalmology.

PRACTICAL WORK. The courses in practical ophthalmology are conducted in the Dispensary for Diseases of the Eye in the University Hospital and in the Eye Wards of the Philadelphia General Hospital. For this purpose the students of the third-year class are divided into sections. The members of each have the opportunity of closely inspecting the patients with external inflammatory diseases of the eye, of seeing the method of applying the remedies, of making the commoner applications utilized in the treatment, of learning the use of the ophthalmoscope so that each student may recognize the healthy fundus and its important diseased conditions; and of ascertaining the results secured by functional testing, such as the pupillary reflexes, the visual acuteness, the field of vision, the balance of the external ocular muscles, and the refractive errors. During the last month of the course a series of quizzes is given and the work of the entire course is reviewed.

OBSTETRICS.

| | |
|--------------------------------|---|
| BARTON COOKE HIRST, M.D..... | <i>Professor of Obstetrics.</i> |
| RICHARD C. NORRIS, M.D. | <i>Assistant Professor of Obstetrics.</i> |
| WILLIAM R. NICHOLSON, M.D..... | } <i>Associates in Obstetrics.</i> |
| JOHN C. HIRST, M.D..... | |
| PHILIP FRANCIS WILLIAMS, M.D.. | } <i>Instructors in Obstetrics.</i> |
| N. L. KNIPE, M.D. | |
| C. D. DANIELS, M.D. | |
| EDMUND J. PIPER, M.D. | |
| G. VICTOR JANVIER, M.D. | |
| L. F. LUBURG, M. D. | } <i>Assistant Instructors in Ob-</i> |
| E. P. BARNARD, M.D. .... |  | stetrics. |

A graduated course of instruction in Obstetrics is given to the members of the third and fourth year classes in the Maternity Pavilion of the University Hospital, in the Medical Laboratories and in the Out-Patient Department of the Hospital, conducted under the direct control of the Professor of Obstetrics.

THIRD YEAR.

Hours

| | |
|--|----|
| LECTURES. <i>Professor Hirst</i> .—Twice a week | 64 |
| MATERNITY SERVICE. Each student spends a week in the dormitory, is present at the delivery of about six cases and witnesses all the emergency surgery. | |

FOURTH YEAR.

| | |
|--|----|
| CONFERENCES. <i>Professor Hirst</i> .—Once a week | 32 |
| CLINICS. <i>Professor Hirst</i> .—In sections. Two hours, three times a week, for ten weeks, for each student | 60 |
| PRACTICAL EXERCISES WITH MANIKINS <i>Assistant Professor Norris and Assistants</i> .—In sections. Once a week, for ten weeks, for each student | 10 |
| RECITATIONS. <i>Dr. J. C. Hirst</i> .—In sections. Once a week, for ten weeks, for each student | 10 |
| MATERNITY SERVICE. Each student spends at least ten days at the Out-Patient Department and delivers on an average ten cases. | |

The instruction in Obstetrics includes demonstrations of palpation, pelvimetry and the signs of pregnancy to sections of four students. In the clinical and operative obstetrics the treatment of all the complications and pathological consequences of the child-bearing act at all periods is given in the maternity amphitheatre. One clinical conference a week with the whole class is devoted mainly to diagnosis.

Electives in primary and intermediate plastic operations, cystoscopy and office treatment are offered to the fourth year class.

In the Anna Dike Scott Memorial Amphitheatre an exhibition of all obstetrical operations is given to the members of both the third and fourth year classes.

PRACTICAL EXERCISES IN THE OUT-PATIENT DEPARTMENT. This department is under the direct control of the Professor of Obstetrics. The total indoor and outdoor service amounts to 2,000 cases a year. The complicated cases in this service demanding operative treatment are transported to the University Hospital, and the operations are exhibited to the combined third and fourth year classes. Each student attends in confinement about ten labor cases and serves as assistant in the ambulatory dispensary for a week, where he is trained in gynecological diagnosis.

PRACTICAL WORK IN UNIVERSITY HOSPITAL. Recently a dormitory accommodating four students has been instituted. Each student

spends at least a week on this service, sleeping in the dormitory, taking the notes of all patients in the hospital, making rounds and being called to see all cases delivered during the night, as well as all other instructive obstetrical procedures.

NEUROLOGY.

WILLIAM G. SPILLER, M.D. *Professor of Neurology.*

JAMES W. MCCONNELL, M.D. *Associate in Neurology.*

S. D. LUDLUM, M.D. *Associate in Neurology and in Neuropathology.*

SAMUEL LEOPOLD, M.D.

WILLIAMS B. CADWALADER, M.D..

GEORGE WILSON, M.D.

JOSEPH MCIVER, M.D.

ANDREW H. WOODS, M.D.

ANNIE E. TAIT, M.D.

NATHANIEL W. WINKELMAN, M.D.

ABRAHAM M. ORNSTEEN, M.D....

Instructors in Neurology and in Neuropathology.

Assistant Instructors in Neurology.

THIRD YEAR.

NEUROPATHOLOGY. See under Pathology.

FOURTH YEAR.

Hours

| | |
|---|----|
| CLINICAL LECTURES AND LANTERN DEMONSTRATIONS IN NEUROPATHOLOGY. <i>Professor Spiller.</i> —Twice a week first half year; once a week second half year | 48 |
| WARD CLASSES. <i>Drs. McConnell, Ludlum, Cadwalader, Wilson, McIver and Woods.</i> —In sections. Two hours a week for ten weeks, for each student | 20 |

NEUROPATHOLOGY. The course is open also to post-graduate students. The work is in part clinical. The students of the third year are shown various gross pathological specimens and are taught the signs and symptoms caused by the lesions represented by these specimens. In this way they receive much instruction in the physiology as well as the pathology of the nervous system. When considered desirable, the clinical history of the case illustrated is given. The students are taught the practical application of their knowledge of anatomy and physiology and are prepared for their fourth year clinical work in neurology. The technique employed in investigation

is also taught so far as possible, so as to include the methods of imbedding, cutting, staining, etc., employed in this branch of medicine. The students are in this way prepared to conduct original investigations in the pathology of the nervous system after their graduation, if they so desire. Instruction is also given in the methods of preparation of the brain and cord for gross examination, so that the nervous tissues may not be injured for microscopical study. The instruction in the third year is given by Drs. Ludlum, Cadwalader, Woods, Wilson and McIver.

Microscopical sections illustrating many pathological conditions are demonstrated by the lantern to the fourth-year class by Professor Spiller during the year, so that the students are enabled to study the more minute morbid changes occurring in diseases of the nervous system, and to understand the symptoms produced by them. These lantern lectures are co-ordinated with the clinical lectures in order to demonstrate the pathology of the clinical cases shown.

CLINICAL LECTURES. One clinical lecture a week is given at the University Hospital throughout the year by Professor Spiller.

One lecture a week is also given by Professor Spiller during the first half of the year at the Philadelphia General Hospital. An effort is made to systematize the teaching, especially at the Philadelphia General Hospital, where the large amount of material always at command enables the teacher to select and arrange beforehand the subjects to be discussed.

WARD CLASS INSTRUCTION. This is given both in the University and in the Philadelphia General Hospital. The class is divided into small sections, so as to give each student the opportunity of personally investigating the cases under the supervision of the instructors.

An elective in Neurology will be given by Dr. Cadwalader in accordance with the arrangements which may be made at the beginning of the session or during its continuance.

In connection with the teaching given in the wards of the University and Philadelphia General Hospitals, advantage is taken of the large outdoor neurological service, students desiring to avail themselves of the opportunity being instructed in the dispensary at times previously arranged. In this way students are brought in contact with nervous diseases in their earlier as well as in their later manifestations. The methods of studying, recording and treating cases are taught. Lectures and demonstrations in electro-therapeutics are given by Dr. McIver to sections of the fourth-year class. The electromedical apparatus used in the outdoor service is of the most

modern type, including static, galvanic and faradic instruments. Instruction is given in the use of the methods now employed in the treatment of diseases of the nervous system.

MENTAL DISEASES.

CHARLES W. BURR, M.D. *Professor of Mental Diseases.*

FOURTH YEAR.

Hours

LECTURES. *Professor Burr.*—Once a week 32

All instruction in Mental Diseases is given in the Philadelphia General Hospital. The first five lectures are systematic, dealing with the aetiology and general symptomatology of such affections, all the remainder being clinical lectures. An elective course is also given; each student who takes it examines the patients himself, reporting his findings and diagnoses to the professor for criticism. Especially in these latter exercises he obtains an insight into the general workings of asylum management.

LARYNGOLOGY AND RHINOLOGY.

CHARLES P. GRAYSON, M.D. *Professor of Laryngology and Rhinology.*

D. N. HUSIK, M.D. *Chief Instructor in Laryngology and Rhinology. Surgeon in Charge Nose and Throat Dispensary.*

JUSTIN G. SCHWERIN, M.D. } *Assistant Instructors in Lar-*
SAMUEL COHEN, M.D. } *ngology.*

THIRD YEAR.

Hours

LECTURES. *Professor Grayson.*—Once a week, for second half year 16

PRACTICAL WORK IN OUT-PATIENT DEPARTMENT. *Professor Grayson and Assistants.*—In sections. Once a week, for ten weeks, for each student 10

LECTURES AND CLINICS. Covering the anatomy and physiology of the upper air and digestive tracts, these being illustrated by drawings

and by dry and wet preparations. The diseases of the nose and its accessory cavities, of the pharynx, the fauces and the larynx, are systematically studied; and in connection with their causation and treatment, emphasis is laid upon the pathologic and therapeutic importance of the systemic conditions with which they are often associated. The surgery of these special regions is also thoroughly demonstrated during the course by a series of clinics.

PRACTICAL WORK IN OUT-PATIENT DEPARTMENT. Throughout equal periods of the session the third-year class attends this course, divided into sections of such size that each student receives an abundance of practical work under the personal supervision of Dr. Grayson and his assistants. The very large service of this dispensary provides ample material for the members of the class to acquire proficiency in the use of the various instruments of examination and treatment, and to become expert in the diagnosis and treatment of the diseases that are more often encountered in general practice.

OTOLOGY.

| | |
|-------------------------------|---|
| B. ALEXANDER RANDALL, M.D.... | <i>Professor of Otology.</i> |
| RALPH BUTLER, M.D. | <i>Assistant Professor of Otology.</i> |
| JAMES A. BABBITT, M.D. | } <i>Instructors in Otology.</i> |
| BENJ. CLARKE GILE, M.D. | |
| WILLIAM C. WOOD, M.D. | |
| SETH A. BRUMM, M.D. | } <i>Assistant Instructors in Otology</i> |
| HENRY A. SCHATZ, M.D. | |
| LEWIS FISHER, M.D. | } <i>Instructors in Neuro-Otology.</i> |
| JOHN P. MULRENAN, M.D. | |

THIRD YEAR.

| | Hours |
|---|-------|
| LECTURES. <i>Professor Randall.</i> —Once a week, second half year.. | 16 |
| WARD CLASSES. <i>Professor Randall and Assistant Professor Butler.</i> —In sections. Once a week, for ten weeks, for each student | 10 |

LECTURES. Partly clinical, but with abundant illustrations by anatomical and pathological preparations, models, charts and the stereopticon. Operations for diseases of the mastoid and lateral sinus and abscess of the brain are demonstrated on the cadaver, if not upon patients.

PRACTICAL WORK. Practical work is given to the class in subsections of ten or less, in the newly equipped Out-Patient Department or wards of the University Hospital. Individual instruction is given by the dispensary staff in the examination, recording and treatment of patients, the work being delegated to the students so far as they may show themselves competent. All are thus drilled in the use of the head-mirror, in rhinoscopy and Eustachian catheterization, as well as in simpler measures. In mastoid and other operations selected students assist or operate under strict supervision, and follow the cases in the later dressings. Stress is laid throughout upon simplicity in the essential methods of diagnosis and treatment, with minute and conscientious care in application.

A Sub-Department of Neuro-Otology has been established nearly six years, to which are referred all cases for cerebral localization, etc., by the ear tests, with most satisfactory results.

MEDICAL JURISPRUDENCE.

DANIEL J. MCCARTHY, A.B., M.D., *Professor of Medical Jurisprudence.*

FOURTH YEAR.

| | Hours |
|---|-------|
| LECTURES. <i>Professor McCarthy.</i> —Once a week, second half year | 16 |

ELECTIVES.

FOURTH YEAR.

| | Hours |
|---|--------|
| A number of courses are offered in Medicine, Surgery, Pediatrics, Orthopedic Surgery, Mental Diseases, Neurology, Genito-Urinary Surgery, Dermatology, Ophthalmology, Otology, Laryngology, Infection and Immunity, Plastic Operations in Obstetrics, Cystoscopy, Gynecology, Therapeutics, Physiology of the Nervous System, and in a few other subjects. Each student has available ten hours a week for ten weeks for these electives and must elect courses amounting to at least 60 hours..... | 60-100 |

FIRST-YEAR CLASS, 1919-1920.

ORDER OF INSTRUCTION, DAILY, **BEFORE** FEB. 1.

| ours. | <i>Monday.</i> | <i>Tuesday.</i> | <i>Wednesday.</i> | <i>Thursday.</i> | <i>Friday.</i> | <i>Saturday.</i> |
|-------|--|--|--|--|--|--|
| A. M. | Bacteriology. | Physiological Chemistry. | Physiological Chemistry. | Physiological Chemistry. | Physiological Chemistry. | Physiological Chemistry. |
| A. M. | Laboratory of Physiological Chemistry. | Laboratory of Physiological Chemistry. | Laboratory of Physiological Chemistry. | Laboratory of Physiological Chemistry. | Laboratory of Normal Histology and Embryology. | Laboratory of Normal Histology and Embryology. |
| A. M. | | | | | | |
| 2 M. | | | | | | |
| P. M. | | | | | | |
| P. M. | Dissection. | Dissection. | Dissection. | Dissection. | Dissection. | |
| P. M. | | | | | | |
| P. M. | Piersol. Anatomy. | Piersol. Anatomy. | Piersol. Anatomy. | Physiological Chemistry. | Physiological Chemistry. | |
| P. M. | Physiological Chemistry. | Gymnasium. | | | Gymnasium. | |

FIRST-YEAR CLASS, 1919-1920.

ORDER OF INSTRUCTION, DAILY, AFTER FEB. 1.

| <i>Hours.</i> | <i>Monday.</i> | <i>Tuesday.</i> | <i>Wednesday.</i> | <i>Thursday.</i> | <i>Friday.</i> | <i>Saturday.</i> |
|---------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|---|---|
| 9 A. M. | | | | | | |
| 10 A. M. | Bacteriological Laboratory. | Bacteriological Laboratory. | Bacteriological Laboratory. | Bacteriological Laboratory. | Laboratory of Normal Histology and Embryology. | Laboratory of Normal Histology and Embryology. |
| 11 A. M. | | | | | | |
| 12 M. | | | | | | |
| 1 P. M. | | | | | | |
| 2 P. M. | Dissection. | Dissection. | Dissection. | Dissection. | Dissection. | |
| 3 P. M. | | | | | | |
| 4 P. M. | Piersol. Anatomy. | Piersol. Anatomy. | Piersol. Anatomy. | | Stevens. Medical Terminology. | |
| 5 P. M. | | Gymnasium. | | | Gymnasium. | |

SECOND-YEAR CLASS, 1919-1920.

ORDER OF INSTRUCTION, DAILY, BEFORE FEB. 1.

| | <i>Monday.</i> | <i>Tuesday.</i> | <i>Wednesday.</i> | <i>Thursday.</i> | <i>Friday.</i> | <i>Saturday.</i> |
|-------------|---|---|---|---|---|------------------------------|
| <i>urs.</i> | | | | | | |
| <i>M.</i> | Physiology. | Physiology. | Physiology. | Physiology. | Pharmacology. | Pharmacology. |
| <i>M.</i> | Pathological Laboratory. Section A. | Pathological Laboratory. Section B. | Pathological Laboratory. Section A. | Pathological Laboratory. Section B. | | |
| <i>M.</i> | Pharmacological Laboratory. After Nov. 1. Section B. | Pharmacological Laboratory. After Nov. 1. Section A. | Pharmacological Laboratory. After Nov. 1. Section B. | Pharmacological Laboratory. After Nov. 1. Section A. | Physiological Laboratory. | Physiological Laboratory. |
| <i>M.</i> | | | | | | |
| <i>M.</i> | | | | | | |
| <i>M.</i> | | | Physiological Demonstrations and Conference. | | | |
| <i>M.</i> | Pharmacology Conference Section A. | Pharmacology Conference Section B. | | Pathology. | Physiological Demonstration and Conference. | |
| <i>M.</i> | Pathology. | Lantern Conference in Pathology. | Pathology. | Surgical Antisepsis, etc. | Pathology. | |
| <i>M.</i> | Physical Therapy. | | Physical Therapy. | | | |

SECOND-YEAR CLASS, 1919-20.

ORDER OF INSTRUCTION, DAILY, AFTER FEB. 1.

| <i>Hours.</i> | <i>Monday.</i> | <i>Tuesday.</i> | <i>Wednesday.</i> | <i>Thursday.</i> | <i>Friday.</i> | <i>Saturday.</i> |
|---------------|---|--|---|---|---|------------------------------|
| 9 A. M. | Physiology. | Physiology. | Physiology. | Physiology. | Pharmacology. | Pharmacology. |
| 10 A. M. | Pathological Laboratory. Section A. —— Pharmacological Laboratory. Section B. | Pathological Laboratory. Section B. —— Pharmacological Conference 10-11 Section A. Physiological Conference. 11-12 Section A. | Pathological Laboratory. Section A. —— Pharmacological Conference. 10-11 Section B. Physiological Conference. 11-12 Section B. | Pathological Laboratory. Section B. —— Pharmacological Laboratory. Section A. | Physiological Laboratory. | Physiological Laboratory. |
| 11 A. M. | | | | | | |
| 12 M. | | | | | | |
| 1 P. M. | | | | | | |
| 2 P. M. | Bandaging. Section A. —— Physical Diagnosis. Section B. | Bandaging. Section B. —— Physical Diagnosis. Section A. | Toxicological Laboratory. | Physical Diagnosis. | Physiological Demonstration and Conference. | |
| 3 P. M. | | | | Toxicology. | | |
| 4 P. M. | Pathology. | Pathological Conference and Lantern. | | Surgical Antisepsis, etc. | Pathology. | |
| 5 P. M. | Physical Therapy. | Obstetrics. After April 1. | Physical Therapy. | | | |

ORDER

| <i>Hours.</i> | <i>Monday.</i> | <i>Tuesday.</i> | <i>Saturday.</i> |
|---------------|---|---|--|
| 9 A. M. | SMITH. Pathology. | A. C. Su | PEPPER. Medicine. |
| 10 A. M. | COPE. Clinical Pathology. | AB Hy Before Ped After | FUSSELL. Applied Therapeutics. |
| 11 A. M. | Medical Dispensary. See Subsection Roster. | Phipps' Institute. See Subsection Roster. | Medical Dispensary. Section D. |
| 12 M. | STENGEL. Medicine. | Medical Dispensary. See Subsection Roster. | Surgical Dispensary. Section C. |
| 1 P. M. | | | Gross Morbid Anatomy. Sections A and B. |
| 2 P. M. | Clinical Pathology. See Subsection Roster. | Clinical Pathology. See Subsection Roster. | HARTZ Derm tolog Section C. & Before Feb. A. & I After Feb. |
| 3 P. M. | Operative Surgery. See Subsection Roster. | Otolg See Subsec Roste | |
| 4 P. M. | HARTZELL. Dermatology. | H Obs | |
| 5 P. M. | MÜLLER. Surgery. | PAN Roent | |

ORDER OF DAILY INSTRUCTION.—THIRD YEAR CLASS.—1919-20

| Hour. | Monday. | Tuesday. | Wednesday. | Thursday. | Friday. | Saturday. |
|----------|---|--|---|--|--|---|
| 9 A. M. | SMITH. Pathology. | A. C. WOOD. Surgery. | STENOEL. Medicine. | LANDIS. Medicine. | ROSS. Surgery. | PEPPER. Medicine. |
| 10 A. M. | CORP. Clinical Pathology. | ABBOTT. Hygiene. Before Feb. 1. Pediatrics. After Feb. 1. | Orthopedic Surgery. Before Feb. 1. ELIASON. Surgery. After Feb. 1. | FUSSELL. Applied Therapeutics. | ABBOTT. Hygiene. Before Feb. 1. Medical Technic. After Feb. 1. | FUSSELL. Applied Therapeutics. |
| 11 A. M. | Medical Dispensary. See Subsection Roster. Surgical Dispensary. See Subsection Roster. Medicine. See Subsection Roster. | Medical Dispensary. See Subsection Roster. Phelps Institute. See Subsection Roster. Surgical Dispensary. See Subsection Roster. | Medical Dispensary. Section B. Surgical Dispensary. Section A. | Medical Dispensary. Section C. Surgical Dispensary. Section D. | Medical Dispensary. Section A. Surgical Dispensary. Section B. | Medical Dispensary. Section D. Surgical Dispensary. Section C. |
| 12 M. | STENOEL. Medicine. | ELIASON. Surgery. See Subsection Roster. | SPILLER. Neuropathology. Before Feb. 1. Sections C and D. Practical Therapeutics. 12-1 Before Feb. 1 11-1 After Feb. 1. Sections C and D. | SPILLER. Neuropathology. Before Feb. 1. Sections A and B. Practical Therapeutics. 12-1 Before Feb. 1. 11-1 After Feb. 1. Sections A and B. | Gross Medical Anatomy. Sections C and D. | Gross Medical Anatomy. Sections A and B. |
| 1 P. M. | | | | | | |
| 2 P. M. | Clinical Pathology. See Subsection Roster. Operative Surgery. See Subsection Roster. Otolaryngology. See Subsection Roster. | Laryngology. Dermatology. See Subsection Roster. | STEVENS. Medicine. Before Feb. 1. STAHL. Dietetics. After Feb. 1. | Laryngology. Dermatology. See Subsection Roster. | Clinical Pathology. See Subsection Roster. Medicine. See Subsection Roster. | Laryngology. Dermatology. See Subsection Roster. |
| 3 P. M. | Ophthalmology. Section C. Before Feb. 1. | Clinical Pathology. See Subsection Roster. Otolaryngology. See Subsection Roster. Ophthalmology. Section B. Before Feb. 1. | SMITH. Pathology. | Clinical Pathology. See Subsection Roster. Operative Surgery. See Subsection Roster. Otolaryngology. See Subsection Roster. Ophthalmology. Section D. Before Feb. 1. | Pharmacology. See Subsection Roster. Otolaryngology. See Subsection Roster. Ophthalmology. Section A. Before Feb. 1. | Ophthalmology. Section A. Before Feb. 1. |
| 4 P. M. | HARTZELL. Dermatology. | HUNT. Obstetrics. | DE SCHWEINITZ. Ophthalmology. Before Feb. 1. GRAYSON. Laryngology. After Feb. 1. | HUNT. Obstetrics. | DE SCHWEINITZ. Ophthalmology. Before Feb. 1. RANDALL. Otolaryngology. After Feb. 1. | |
| 5 P. M. | MÜLLER. Surgery. | PANCOAST. Roentgenology. | CLARK. Gynecology. | T. T. THOMAS. Applied Anatomy. | T. T. THOMAS. Applied Anatomy. | |

SUBSECTION ROSTER, THIRD-YEAR CLASS. SESSION 1919-20.

FIRST PERIOD—OCTOBER 6th TO NOVEMBER 26th, INCLUSIVE.

| <i>Hour.</i> | <i>Subject.</i> | <i>Monday.</i> | <i>Tuesday.</i> | <i>Thursday.</i> | <i>Friday.</i> |
|--------------|--|------------------|-----------------|------------------|------------------|
| 1-12 | *Medical Dispensary | A | B | — | — |
| 1-12 | Surgical Dispensary | B | C | — | — |
| 1-12 | Medicine | C, D | — | — | — |
| 1- 1 | Phipps Institute | — | A | — | — |
| 2- 1 | Surgery | — | C, D | — | — |
| 2- 3 | Laryngology | B ¹ | B ² | B ³ | C ² |
| 2- 3 | Dermatology | B ^{2,3} | — | B ^{1,2} | C ^{1,3} |
| 2- 4 | Medicine, Philadelphia Hos- pital | — | — | — | D |
| 2- 4 | Operative Surgery | A | — | A | — |
| 2- 4 | Clinical Pathology | D | A | C | B |
| 3- 4 | Otology | B ¹ | — | B ³ | C ² |

SECOND PERIOD—DECEMBER 1st TO JANUARY 31st, INCLUSIVE.

| <i>Hour.</i> | <i>Subject.</i> | <i>Monday.</i> | <i>Tuesday.</i> | <i>Thursday.</i> | <i>Friday.</i> |
|--------------|--|------------------|-----------------|------------------|------------------|
| 1-12 | *Medical Dispensary | B | A | — | — |
| 1-12 | Surgical Dispensary | A | D | — | — |
| 1-12 | Medicine | C, D | — | — | — |
| 1- 1 | Phipps Institute | — | B | — | — |
| 2- 1 | Surgery | — | C, D | — | — |
| 2- 3 | Laryngology | A ¹ | B ¹ | A ³ | D ² |
| 2- 3 | Dermatology | A ^{2,3} | — | A ^{1,2} | D ^{1,3} |
| 2- 4 | Medicine, Philadelphia Hos- pital | — | — | — | C |
| 2- 4 | Operative Surgery | B | — | B | — |
| 2- 4 | Clinical Pathology | D | A | C | B |
| 3- 4 | Otology | A ¹ | — | A ³ | D ² |

THIRD PERIOD—FEBRUARY 2nd TO MARCH 27th, INCLUSIVE.

| <i>Hour.</i> | <i>Subject.</i> | <i>Monday.</i> | <i>Tuesday.</i> | <i>Thursday.</i> | <i>Friday.</i> |
|--------------|---|------------------|-----------------|------------------|------------------|
| 11-12 | *Medical Dispensary..... | C | D | — | — |
| 11-12 | Surgical Dispensary..... | D | A | — | — |
| 11-12 | Medicine.. | A, B | — | — | — |
| 11- 1 | Phipps Institute..... | — | C | — | — |
| 12- 1 | Surgery..... | — | A, B | — | — |
| 2- 3 | Laryngology..... | D ¹ | D ² | D ³ | A ² |
| 2- 3 | Dermatology..... | D ^{2,3} | — | D ^{1,2} | A ^{1,3} |
| 2- 4 | Medicine, Philadelphia Hos- pital..... | — | — | — | B |
| 2- 4 | Operative Surgery..... | C | — | C | — |
| 2- 4 | Clinical Pathology..... | A | C | B | D |
| 3- 4 | Otology..... | D ¹ | D ² | D ³ | A ² |

FOURTH PERIOD—MARCH 29th TO MAY 22nd, INCLUSIVE.

| <i>Hour.</i> | <i>Subject.</i> | <i>Monday.</i> | <i>Tuesday.</i> | <i>Thursday.</i> | <i>Friday.</i> |
|--------------|---|------------------|-----------------|------------------|------------------|
| 11-12 | *Medical Dispensary..... | D | C | — | — |
| 11-12 | Surgical Dispensary..... | C | B | — | — |
| 11-12 | Medicine..... | A, B | — | — | — |
| 11- 1 | Phipps Institute..... | — | D | — | — |
| 12- 1 | Surgery..... | — | A, B | — | — |
| 2- 3 | Laryngology..... | C ¹ | D ¹ | C ³ | B ² |
| 2- 3 | Dermatology..... | C ^{2,3} | — | C ^{1,2} | B ^{1,3} |
| 2- 4 | Medicine, Philadelphia Hos- pital..... | — | — | — | A |
| 2- 4 | Operative Surgery..... | D | — | D | — |
| 2- 4 | Clinical Pathology..... | A | C | B | D |
| 3- 4 | Otology..... | C ¹ | D ¹ | C ³ | B ² |

* Tuesdays, 11-1.

The Class is divided into 3 equal groups:

Group I. Medical Trimester Group.

Group II. Surgical Trimester Group.

Group III. Obstetrics—Gynecology—Elective Group.

1. During the hours from 9 to 12 daily (except Sunday) and from 2 to 4, except Saturday and Sunday, the groups will be occupied with *Sectional Work* in the subjects designated in the Rosters.
2. From 12 to 1 the *whole class* will attend lectures or clinics.
3. From 4 to 5 (4.30 to 5.30, Tuesday and Thursday) the whole class will attend clinical lectures.
During the Elective Trimester:
the hours from 11 to 12 on Monday, Thursday, Friday,
2 to 4 on Tuesday, Wednesday and Thursday,
2 to 3 on Friday,
will be open for elective work—a total of 100 hours.

FOURTH YEAR CLASS—SESSION 1919-20.

Trimester Roster.

| | October 6 to December 20. | January 5 to March 6. | March 8 to May 15. |
|---|--|---|--|
| Medical Trimester. | <p>Medical Wards { 1-43 University Hospital { 1-22 Oct. 6 to Nov. 8 23-43 Nov. 10 to Dec. 20</p> <p>Medical Wards { 23-43 Oct. 6 to Nov. 8 Philadelphia Hospital { 1-22 Nov. 10 to Dec. 20</p> | <p>Medical Wards { 44-86 University Hospital { 44-65 Jan. 5 to Jan. 31 66-86 Feb. 2 to Mar. 6</p> <p>Medical Wards { 66-86 Jan. 5 to Jan. 31 Philadelphia Hospital { 44-65 Feb. 2 to Mar. 6</p> | <p>Medical Wards { 87-129 University Hospital { 87-108 Mar. 8 to Apr. 17 109-129 Apr. 19 to May 15</p> <p>Medical Wards { 109-129 Mar. 8 to Apr. 17 Philadelphia Hospital { 87-108 Apr. 19 to May 15</p> |
| Surgical Trimester. | 87-129 | 1-43 | 44-86 |
| Gynecology, Obstetrics, and Elective Trimester. | 44-86 | 87-129 | 1-43 |

ORDER OF INSTRUCTION.—FOURTH YEAR CLASS, 1919-20.

Medical Trimester.

80

SCHOOL OF MEDICINE

| Hours. | Monday. | Tuesday. | Wednesday. | Thursday. | Friday. | Saturday. |
|----------|--|---|---|--|--|---|
| 9 A. M. | Medical Wards, Philadelphia and University Hospitals. | Medical Wards, Philadelphia and University Hospitals. | Medical Wards, Philadelphia and University Hospitals. | Medical Wards, Philadelphia and University Hospitals. | Medical Wards, Philadelphia and University Hospitals. | Hmst. Obstetrics. Medical Wards. Univ. Hosp. *Pediatric Wards. Univ. Hosp. |
| 10 A. M. | | | | | | |
| 11 A. M. | | | | | | |
| 12 M. | STENGEL. Medicine. | DEAVER. Surgery. | SPILLER. Neurology. Before Feb. 1. McCARHY. Medical Jurisprudence. After Feb. 1. | NEILSON. Before Feb. 1. JONSON. Surgery. After Feb. 1. | DEAVER. Surgery. | GRIFFITH. Pediatrics. |
| 1 P. M. | | | | | | |
| 2 P. M. | STEVENS and ALLYN. Medical Wards, Phila. Hosp. Subsection. Pediatrics, Subsection. | Univ. Hosp. Medical Wards. Subsection. Pediatric Subsection. | FUSSELL. Subsection. Univ. Hosp. Medical Wards. Subsection. | Univ. Hosp. Medical Wards. Subsection. Pediatrics, Subsection. | Univ. Hosp. Medical Wards. Subsection. Medical Wards, Phila. Hosp. Subsection. Pediatrics, Subsection. | STEVENS and ALLYN. Medical Wards, Phila. Hosp. Subsection. Pediatrics, Subsection. |
| 3 P. M. | | | | | | |
| 4 P. M. | SPILLER. Neurology. | 4.30 BURR. Mental Diseases. 5.30 | RIESMAN. Clinical Conference. | 4.30 SAILER. Clinical Conference. 5.30 | STENGEL. Clinical Conference. 5.30 | |
| 5 P. M. | | | | | | |

* The section working in Medical Wards, Philadelphia Hospital, will report at Pediatric Wards, University Hospital, on Saturdays from 10-12.

| HOUR. | SUBJECT. | DAY. | FRIDAY. | |
|---------------------|--|----------------------------------|-------------------------------|----------------------------------|
| | | November 10 to December 20 | October 6 to November 8 | November 10 to December 20 |
| Surgical Trimester: | | | | |
| 9-10 | Surgical Wards, University Hospital | 87-108 | 87-129 | 87-129 |
| | Surgical Wards, Philadelphia Hospital | 109-129 | ..... | ..... |
| Medical Trimester: | | | | |
| ‡ 2-4 | Medical Wards, University Hospital | 23-43 | 1-22 | 23-43 |
| 2-3 | Medical Wards, Philadelphia Hospital | ..... | 23-43 | 1-22 |
| 2-3 | Applied Therapeutics. .... | ..... | ..... | ..... |
| ¶ | Pediatrics { Philadelphia Hospital. .... | ..... | 23-33 | 12-22 |
| | University Hospital. .... | ..... | 34-43 | 1-11 |
| | Children's Hospital. | 1-22 | ..... | ..... |
| Elective Trimester: | | | | |
| 3-4 | Neurology { University Hospital. .... | ..... | 77-86 | 55-65 |
|  |  | ..... | 44-54 | 66-76 |
|  |  | ..... | 55-65 | 77-86 |
| | | Philadelphia Hospital. | 66-76 | 44-54 |
| | | | | |

| HOUR. | SUBJECT. | DAY. | FRIDAY. | |
|-------|----------|-----------------------------|-------------------------------|-----------------------------|
| | | February 2 to March 6 | January 5 to January 31 | February 2 to March 6 |

FOURTH YEAR—SECTIONAL ROSTER, SESSION 1919-20.
FIRST PERIOD—October 6 to December 20.

| HOUR. | SUBJECT. | MONDAY. | | TUESDAY. | | WEDNESDAY. | | THURSDAY. | | FRIDAY. | |
|---------------------|--|---|----------------------------------|-------------------------------|----------------------------------|-------------------------------|----------------------------------|-------------------------------|----------------------------------|-------------------------------|----------------------------------|
| | | October 6 to November 8 | November 10 to December 20 | October 6 to November 8 | November 10 to December 20 | October 6 to November 8 | November 10 to December 20 | October 6 to November 8 | November 10 to December 20 | October 6 to November 8 | November 10 to December 20 |
| Surgical Trimester: | | | | | | | | | | | |
| 9-10 | Surgical Wards, University Hospital..... | 87-108 | 109-129 | 87-129 | 87-129 | 87-129 | 87-129 | 109-129 | 87-108 | 87-129 | 87-129 |
| | Surgical Wards, Philadelphia Hospital..... | 109-129 | 87-108 | ..... | ..... | ..... | ..... | 87-108 | 109-129 | ..... | ..... |
| Medical Trimester: | | | | | | | | | | | |
| 2-4 | Medical Wards, University Hospital..... | 1-22 | 23-43 | 1-22 | 23-43 | 1-22 | 23-43 | 1-22 | 23-43 | 1-22 | 23-43 |
| | Medical Wards, Philadelphia Hospital..... | 23-43 | 1-22 | ..... | ..... | 1-43 | 1-43 | ..... | ..... | 23-43 | 1-22 |
| 2-3 | Applied Therapeutics..... | ..... | ..... | ..... | ..... | 34-43 | 1-11 | ..... | ..... | ..... | ..... |
| | Philadelphia Hospital..... | 23-33 | 12-22 | ..... | ..... | 23-33 | 12-22 | ..... | ..... | 34-43 | 1-11 |
| ¶ | Pediatrics { University Hospital..... | 34-43 | 1-11 | ..... | ..... | ..... | ..... | 23-43 | 1-22 | ..... | ..... |
| | Children's Hospital..... | ..... | ..... | 23-43 | 1-22 | ..... | ..... | ..... | ..... | ..... | ..... |
| Elective Trimester: | | | | | | | | | | | |
| 3-4 | Neurology { | Woods..... | 77-86 | 55-65 | ..... | ..... | ..... | ..... | ..... | 77-86 | 55-65 |
| | | University Hospital..... | 66-76 | 44-54 | ..... | ..... | ..... | ..... | ..... | 44-54 | 66-76 |
| | | Ludlum..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 55-65 | 77-86 |
| | | Philadelphia Hospital... { McConnell..... | 44-54 | 66-76 | ..... | ..... | ..... | ..... | ..... | 66-76 | 44-54 |
| | | Wilson..... | 55-65 | 77-86 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

SECOND PERIOD—January 5 to March 6.

| | | MONDAY. | | TUESDAY. | | WEDNESDAY. | | THURSDAY. | | FRIDAY. | | |
|---------------------|--|-------------------------------|-----------------------------|-------------------------------|-----------------------------|-------------------------------|-----------------------------|-------------------------------|-----------------------------|-------------------------------|-----------------------------|---------|
| HOUR. | SUBJECT. | January 5 to January 31 | February 2 to March 6 | January 5 to January 31 | February 2 to March 6 | January 5 to January 31 | February 2 to March 6 | January 5 to January 31 | February 2 to March 6 | January 5 to January 31 | February 2 to March 6 | |
| Surgical Trimester: | | | | | | | | | | | | |
| 9-10 | Surgical Wards, University Hospital..... | 1-22 | 23-43 | 1-43 | 1-43 | 1-43 | 1-43 | 23-43 | 1-22 | 1-43 | 1-43 | |
| | Surgical Wards, Philadelphia Hospital..... | 23-43 | 1-22 | ..... | ..... | ..... | ..... | 1-22 | 23-43 | ..... | ..... |  |
| Medical Trimester: | | | | | | | | | | | | |
| ‡ 2-4 | Medical Wards, University Hospital..... | 44-65 | 66-86 | 44-65 | 66-86 | 44-65 | 66-86 | 44-65 | 66-86 | 44-65 | 66-86 | |
| 2-3 | Medical Wards, Philadelphia Hospital..... | 66-86 | 44-65 | ..... | ..... | 44-65 | 44-86 | ..... | ..... | 66-86 | 44-65 | |
| 2-3 | Applied Therapeutics..... | ..... | ..... | ..... | ..... | 44-86 | 44-86 | ..... | ..... | ..... | ..... |  |
| ¶ | Philadelphia Hospital..... | 77-86 | 55-65 | ..... | ..... | 66-76 | 44-54 | ..... | ..... | 77-86 | 55-65 | |
| | University Hospital..... | 66-76 | 44-54 | ..... | ..... | 77-86 | 55-65 | ..... | ..... | 66-76 | 44-54 | |
| ¶ | Children's Hospital..... | ..... | ..... | 66-86 | 44-65 | ..... | ..... | 66-86 | 44-65 | ..... | ..... |  |
| Elective Trimester: | | | | | | | | | | | | |
| 3-4 | Neurology { | Woods..... | 120-129 | 98-108 | | | | | | | 120-129 | 98-108 |
| | | University Hospital..... | 109-119 | 87-97 | | | | | | | 87-97 | 109-119 |
| | | Luftum..... | | | | | | | | | | |
| | | McConnell..... | 87-97 | 109-119 | | | | | | | 98-108 | 120-129 |
| | | Philadelphia Hospital... { | Wilson..... | 98-108 | 120-129 | | | | | | 109-119 | 87-97 |

THIRD PERIOD—March 8 to May 15.

| | | MONDAY. | | TUESDAY. | | WEDNESDAY. | | THURSDAY. | | FRIDAY. | |
|---------------------|--|----------------------------|--------------------------|---------------------------|--------------------------|---------------------------|--------------------------|---------------------------|--------------------------|---------------------------|--------------------------|
| HOOR. | SUBJECT. | March 8 to April 17 | April 19 to May 15 | March 8 to April 17 | April 19 to May 15 | March 8 to April 17 | April 19 to May 15 | March 8 to April 17 | April 19 to May 15 | March 8 to April 17 | April 19 to May 15 |
| Surgical Trimester: | | | | | | | | | | | |
| 9-10 | Surgical Wards, University Hospital..... | 44-65 | 66-86 | 44-86 | 44-86 | 44-86 | 44-86 | 66-86 | 44-65 | 44-86 | 44-86 |
| | Surgical Wards, Philadelphia Hospital..... | 66-86 | 44-65 | | | | | 44-65 | 66-86 | | |
| Medical Trimester: | | | | | | | | | | | |
| 2-4 | Medical Wards, University Hospital..... | 87-108 | 109-129 | 87-108 | 109-129 | 87-108 | 109-129 | 87-108 | 109-129 | 87-108 | 109-129 |
| | Medical Wards, Philadelphia Hospital..... | 109-129 | 87-108 | | | 87-129 | 87-129 | | | 109-129 | 87-108 |
| 2-3 | Applied Therapeutics..... | 108-119 | 98-108 | | | 120-129 | 87-97 | | | 109-119 | 98-108 |
| ¶ | Philadelphia Hospital..... | 108-119 | 98-108 | | | 109-119 | 98-108 | | | 120-129 | 87-97 |
| | University Hospital..... | 120-129 | 87-97 | 109-129 | 87-108 | | | 109-129 | 87-108 | | |
| | Children's Hospital..... | | | | | | | | | | |
| Elective Trimester: | | | | | | | | | | | |
| 3-4 | Neurology { | Woods..... | 34-43 | 12-22 | | | | | | 34-43 | 12-22 |
| | | University Hospital..... | 23-33 | 1-11 | | | | | | 1-11 | 23-33 |
| | | Ludlum..... | | | | | | | | | |
| | | 1-11 | 23-33 | | | | | | | 12-22 | 34-43 |
| | | Philadelphia Hospital..... | McConnell..... | 12-22 | 34-43 | | | | | 23-33 | 1-11 |
| | | Wilson..... | | | | | | | | | |

‡ Wednesday 3-4.

¶ Philadelphia and University Sections, 3-4; Children's, 2-4.

ORDER OF INSTRUCTION.—FOURTH YEAR CLASS, 1919-20.

Surgical Trimester.

| | <i>Monday.</i> | <i>Tuesday.</i> | <i>Wednesday.</i> | <i>Thursday.</i> | <i>Friday.</i> | <i>Saturday.</i> |
|------|---------------------------------|-----------------------------------|---|--|--|---------------------------|
| urs. | | | | | | |
| . M. | | | | | | HIRST. Obstetrics. |
| . M. | Surgical Ward Work. | Surgical Ward Work. | Surgical Ward Work. | Surgical Ward Work. | Surgical Ward Work. | Surgical Ward Work. |
| . M. | | | | | | |
| 2 M. | STENGEL. Medicine. | DEAVER. Surgery. | SPILLER. Neurology. Before Feb. 1. McCARTHY. Medical Jurisprudence. After Feb. 1. | NEILSON. Before Feb. 1. JOPSON. Surgery. After Feb. 1. | DEAVER. Surgery. | GRIFFITH. Pediatrics. |
| . M. | | | | | | |
| . M. | Genito-Urinary Ward Classes. | Surgery. | Genito-Urinary Ward Classes. | DEAVER. Surgical Clinic. Lankenau Hospital. | Laboratory of Surgical Pathology. | |
| . M. | | | | | | |
| . M. | SPILLER. Neurology. | 4.30 BURR. Mental Diseases. | RIESMAN. Clinical Conference. | 4.30 SAILER. Clinical Conference. | STENGEL. Clinical Conference. | |
| . M. | | 5.30 | | 5.30 | 5.30 | |

ORDER OF INSTRUCTION.—FOURTH YEAR CLASS, 1919-20.**Obstetrics, Gynecology, Elective Trimester.**

| <i>Hours.</i> | <i>Monday.</i> | <i>Tuesday.</i> | <i>Wednesday.</i> | <i>Thursday.</i> | <i>Friday.</i> | <i>Saturday.</i> |
|---------------|-------------------------------|------------------------------------|---|--|-------------------------------------|--|
| 9 A. M. | CLARK. Gynecology. | HIRST. Obstetrics. | CLARK. Gynecology. | HIRST. Obstetrics. | CLARK. Gynecology. | HIRST. Obstetrics. |
| 10 A. M. | | | | | | HIRST. Obstetrics. (Subsection.) |
| 11 A. M. | Elective. | Recitation. Obstetrics. | Recitation. Gynecology. | Elective. | Elective. | |
| 12 M. | STENGEL. Medicine. | DEAVER. Surgery. | SPILLER. Neurology. Before Feb. 1. McCARTHY. Medical Jurisprudence. After Feb. 1. | NEILSON. Before Feb. 1. JOPSON. Surgery. After Feb. 1. | DEAVER. Surgery. | GRIFFITH. Pediatrics. |
| 1 P. M. | | | | | | |
| 2 P. M. | Operative Obstetrics. | Elective. | Elective. | Elective. | Elective. | |
| 3 P. M. | Neurological Ward Classes. | | | | Neurological Ward Classes. | |
| 4 P. M. | SPILLER. Neurology. | 4.30. BURN. Mental Diseases. | RIESMAN. Clinical Conference. | 4.30. SAILER. Clinical Conference. | STENGEL. Clinical Conference. | |
| 5 P. M. | | 5.30 | | 5.30 | 5.30 | |

PART IV.

GRADUATE WORK.

1.—THE MEDICO-CHIRURGICAL COLLEGE GRADUATE SCHOOL OF MEDICINE OF THE UNIVERSITY OF PENNSYLVANIA.

According to the agreement entered into by the University of Pennsylvania and the Medico-Chirurgical College of Philadelphia at the time of the merger of these two schools a Post Graduate School of Medicine has been created. For information concerning the Graduate School of Medicine, see separate announcement, copies of which can be obtained from the Dean of the Graduate School of Medicine, Polyclinic Hospital, Eighteenth and Lombard streets, Philadelphia.

In addition to the usual accommodations afforded graduates of this and other regular medical schools to attend the laboratory and clinical work of the school, three special provisions for post-graduate work leading to degrees are open to applicants, viz., a course of instruction in Public Hygiene leading to the degree Dr.P.H. (Doctor of Public Hygiene) for graduates in Medicine and the certificate C.S. (Certified Sanitarian), for those not holding the M.D. degree, and, under the rules of the Graduate School of the University of Pennsylvania, the election of certain branches in the School of Medicine in courses leading to the Ph.D. degree.

In addition, the special courses in Tropical Medicine are intended especially for post-graduates, and a limited number of post-graduate students may be accommodated in the work of the Phipps Institute.

2.—COURSES IN PUBLIC HYGIENE.

ALEXANDER C. ABBOTT, M.D., Sc.D., Dr.P.H., Pepper Professor of Hygiene and Bacteriology and Director of the Laboratory of Hygiene.

WILLIAM S. PARDOE, B.A., S.C., Assistant Professor of Civil Engineering.

ALLEN J. SMITH, A.M., M.D., Sc.D., LL.D., Professor of Pathology, Comparative Pathology and Director of the Courses in Tropical Medicine.

R. TAIT McKENZIE, A.B., M.D., Professor of Physical Education and Director of the Department of Physical Education.

LOUIS A. KLEIN, V.M.D., Professor of Pharmacology and Veterinary Hygiene and Dean of the Veterinary School.

DAVID H. BERGEY, A.M., M.D., DR.P.H., Assistant Professor of Hygiene and Bacteriology.

THOMAS NOLAN, PH.B., M.S., A.M., Professor of Architectural Construction,

PHILIP P. CALVERT, PH.D., Professor of Zoölogy.

HENRY FIELD SMYTH, M.D., DR.P.H., Instructor in Hygiene and Bacteriology.

WALTER S. CORNELL, B.S., M.D., Instructor in Osteology, University of Pennsylvania, Director of Medical Inspection in the Public Schools of Philadelphia.

DAVID HENRY WENRICH, PH.D., Instructor in Zoölogy.

SENECA EGBERT, M.D., Professor of Hygiene.

Sanitary Engineering.—Including a consideration of water supplies; sewerage and sewage disposal; the disposal of municipal refuse and street cleaning.

Sanitary Engineering of Buildings.—Including the principles and practices involved in their heating and ventilation; the various methods of draining and plumbing.

Inspection of Meat, Milk and Other Animal Products.—Comprehending a discussion of the general question of meat inspection, of the diseases of food-producing animals dangerous to man; of milk, particularly of the proper methods of production, preservation and delivering; and of the approved methods for the preservation of all such products.

Practical Methods Used in Sanitary Work, i. e., the practical application of chemical, physical and biological methods to the study of the air, water, soil, food, raiment; the methods for the disposal of refuse; the characteristics of offensive and dangerous trades.

Practical Bacteriology.—Covering the use of apparatus. the methods of cultivating and isolating bacteria; the study of special types of bacteria, particularly those concerned in the causation of disease; a study of immunity, protective vaccinations and the blood reactions attendant thereto; a study of disinfectants and methods of practical disinfection; the bacteriological analysis of air, water, soil, foods, etc.

Protozoölogy.—This course includes a general introduction to the structure, physiology, life-histories and classification of the protozoa, with especial reference to those forms which cause disease in man and the lower animals. Attention is

paid to the technique of protozoan investigation, the special methods of cultivating, fixing, staining and sectioning the protozoa being considered. An attempt is made in the lectures to point out the most promising fields for future investigation, and facilities are offered (in the laboratory) to those desiring them, to pursue original lines of research.

Arthropods and Disease.—Characters and structures of the arthropods and their subdivisions, with special attention to those forms of arachnids and of insects which as parasites or otherwise attack man and mammals, and which carry, or may serve as carriers of disease, or which possess poisonous secretions.

Helminthology and General Medical Zoölogy.—In this course are discussed animal parasites in general, particularly their anatomy, life history and modes of dissemination, followed by special consideration of the trematodes, cestodes and nematodes parasitic for man. Where necessary or desirable for purposes of illustration similar parasites occurring in other animals are introduced. This instruction is by both lectures and laboratory work.

Pathology of Tropical Diseases.—In this course are discussed in general the factors involved in the causation of diseases peculiar to tropical countries, taking up principally those due to protozoa, to bacteria and to the higher vegetable parasites, together with those referable to unknown and non-vital causes. This instruction is given both by lectures and laboratory exercises.

Medical Inspection of Schools.—This instruction is given in a course of lectures on the subject of medical inspection of school children, and the segregation and care of the mentally deficient pupil found in the schools.

Personal Hygiene.—Covering the topics of anthropometry, the use of exercise for correction of defects; the value of exercise in the maintenance of physiological equilibrium.

Vital Statistics.—Statistical methods and the results, with special reference to the population of cities.

Sanitary Legislation.—Comprising a study of the Federal, State and Municipal laws and regulations for safeguarding the public health.

General Hygiene.—Designed to co-ordinate the foregoing topics and to indicate the relation of each and all to the general question of preventive medicine.

Industrial Hygiene.—Lectures and demonstrations upon the history and development of the subject, together with tours of inspection to typical industries.

This course covers one academic year.

At the termination of the course both theoretical and practical examinations will be held and on all Doctors of Medicine demonstrating fitness, a degree, Dr.P.H., designating the holder as "Doctor of Public Hygiene," will be conferred. To those participants in such subjects of the course as are not strictly medical and who do not hold the degree Doctor of Medicine, a certificate designating the holder as "Certified Sanitarian" will be awarded.

At the regular meeting of the Board of Trustees of the University of Pennsylvania, held March 9, 1914, it was decided that all candidates for the degree Doctor of Public Hygiene shall be required to have had the same preliminary education as that now demanded of those entering upon medical courses leading to the degree of Doctor of Medicine; that is to say, at least two years of college work plus the specified amount of physics, chemistry and biology as set forth in University of Pennsylvania catalogue. The fee for the course, including the diploma, is \$150.00. For circular of particulars apply to the

Director of the Laboratory of Hygiene,
University of Pennsylvania.

3.—COURSES IN TROPICAL MEDICINE.

Professor A. C. ABBOTT*Bacteriology, Medical Climatology and Geography, Hygiene of the Tropics and Ships.*

Dr. DAVID HENRY WENRICH*Protozoölogy.*

Dr. P. P. CALVERT*Entomology.*

Professor ALLEN J. SMITH*Helminthology and General Medical Zoölogy, and Pathology; Director of the Courses.*

Dr. DAMASO RIVAS*Assistant Director of the Courses.*
.....*Tropical Medicine.*

Professor G. E. DE SCHWEINITZ...*Ophthalmology.*

Professor M. B. HARTZELL*Dermatology.*

Dr. G. P. MÜLLER*Surgical Applications.*

The University of Pennsylvania in organizing courses of instruction in Tropical Medicine had in mind not only the need for special opportunity in these lines for practitioners of medicine in the semi-tropical surroundings of our Southern States and outlying territories,

but in view of the rapid extension of American commerce into tropical regions realizes the existing and increasing need for medical men with suitable preparation in the extending spheres of American influence in tropical America and the Far East. The comparatively large number of students from Central and South America also has appealed to the authorities as a reason for an attempt to more fully deal with the conditions which such a class of students is certain to meet in their homes when engaged in practice.

For these reasons a course of instruction, which it is hoped will eventually develop into the fullest realization of the desires of the University authorities, has been organized. The fundamental features are particularly dwelt upon as the really essential parts of such a special course of instruction. Philadelphia is not so situated geographically and not possessed of such commercial relations that there may be predicted at all times such number and type of clinical subjects as must be desirable for the full illustration of the various affections to be dealt with; yet there are available, now in one, now in another, hospital of the city, which has permitted the University to make use of the material for teaching purposes, a very fair number of cases of the more common and important affections dealt with, exclusive of those which by law are not permitted entrance to the city from the ship-quarantine guarding the port. In all other divisions of the course than the exhibition of clinical cases it is hoped that ultimate development will leave little to be seriously criticised and much in all of the different lines of instruction which will be found commendable.

It has been determined to offer a course of study extending over a period of fifteen weeks and embracing not less than ten units of work,* at the completion of which period a certificate of attendance is granted, signed by the Provost and Vice-Provost of the University and by the Dean of the Medical School and the Director of the Courses in Tropical Medicine, to all those matriculates who have been in full attendance and who satisfactorily pass examinations in the various branches scheduled for the Courses in Tropical Medicine. To such persons as may have elected individual branches in the course and who satisfy similar requirements for the branch or branches attended, a certificate will be granted for the subject or subjects completed, signed by the Director of the Courses in Tropical Medicine and by the Instructor in the subject in question.

These courses are open to any reputable graduate in Medicine

*A unit is constituted by at least two hours of lecture or recitation work each week for the period of fifteen weeks; or by not less than four hours each week laboratory work, ward work or clinical lectures.

and to students of medicine who may elect them. The requisite ten units for the certificate may be divided by medical students throughout their period of medical study, the order of selection to be prescribed by the Dean of the School of Medicine and the Director of the Courses in Tropical Medicine in consultation with the student.

The fee for the full course is \$150.00.

Graduates of this school or students in course are admitted at half rate. Fee for individual branches will be given upon application; but will be based upon the rule of not less than \$15.00 for each unit.

| Subject. | No. of Units Allotted. | No. Hrs. Systematic Lectures. | No. Hrs. Clin. Lect. or Lab. Wk. | Lecturer. |
|---|------------------------------|-------------------------------------|--|--------------------|
| Med. Climatology and Geography..... | 0.5 | 15 | — | Abbott |
| Hygiene of Tropics and of Ships..... | | | | |
| Tropical Medicine..... | 2.0 | 30 | 60 | — |
| Skin Diseases of Tropics.. | 0.5 | 8 | 15 | Hartzell |
| Eye Diseases of Tropics.. | 0.5 | 7 | 15 | deSchweinitz |
| Protozoölogy..... | 1.0 | 15 | 30 | Wenrich |
| Arthropods and Disease.. | 1.0 | 15 | 30 | Calvert |
| Helminthology and Gen. Med. Zoölogy..... | 1.0 | 15 | 30 | Smith and Rivas |
| Pathology of Tropical Diseases..... | 2.0 | 30 | 60 | Smith and Rivas |
| Bacteriology of Tropical Diseases..... | 1.0 | — | 60 | Abbott |
| Surgery of Tropical Diseases..... | 0.5 | 7 | 15 | Müller |

For further information address, Director of Courses in Tropical Medicine, School of Medicine, University of Pennsylvania.

4.—THE DEPARTMENT OF RESEARCH MEDICINE.

*RICHARD M. PEARCE, M.D. *Professor of Research Medicine.*
 E. B. KRUMBHAAR, M.D. *Assistant Professor of Research Medicine.*

ALFRED CHANUTIN, PH.D. *Assistant in Research Medicine.*

..... ROBERT ROBINSON PORTER *Fellow in Research Medicine.*

..... ROBERT M. GIRVIN *Fellow in Research Medicine.*

This department, established in 1910 by specific endowment, has for its object the investigation of problems in clinical medicine by means of the fundamental medical sciences. It is equipped in such a way that the methods of chemistry, physiology, pathology, bacteriology and pharmacology may be applied to any clinical problem, with special provisions for distinctly experimental investigation, as well as for observation on patients in the wards of the University Hospital. Opportunity for investigation will be given to instructors in the clinical departments of the School of Medicine and to properly prepared practitioners and students. Although essentially a research department, the department will give a limited amount of elective undergraduate instruction in special subjects.

5.—LABORATORY OF DERMATOLOGICAL. RESEARCH.

Director *The Professor of Dermatology.*
 Assistant Director *Dr. Fred D. Weidman.*
 Bacteriologist and Serologist..... *Dr. David L. Farley.*

Opportunity is afforded in the Laboratory, to graduates properly equipped for the work, to do research work in connection with the subject of Dermatology.

Research problems will also be assigned to a limited number of undergraduates as a part of their elective work of the Fourth Year. This will offer clinical, bacteriologic, serologic, histologic and chemical training, depending on the nature of the problem.

6.—HENRY PHIPPS INSTITUTE.

The Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis is intended for the threefold object of research in tuberculosis, of instruction, and as a benefaction to the needy afflicted by tuberculosis. Its research and other activities are

*Resigned.

in charge of a special directoriate (v. p. 98); and under appropriate regulations graduate work in its special lines of operation is afforded properly prepared students of this disease. Its possibilities have been decidedly augmented since the completion of the new building in May, 1913. Laboratory facilities, clinical opportunities for the study of medicine and practice in sociology among the tuberculous are offered. Information may be had by addressing either the Dean of the School of Medicine or the Executive Director of Phipps Institute.

7.—WILLIAM PEPPER LABORATORY OF CLINICAL MEDICINE.

Under appropriate regulations and under approval of the Director of the Laboratory, the facilities of this department (v. p. 96) are extended to graduate students.

8.—FELLOWSHIPS.

THE THOMAS A. SCOTT FELLOWSHIP IN HYGIENE was established in 1892 for the purpose of aiding talented students who desire to become investigators or teachers in the field of sanitary science. The holder of the Fellowship receives a remuneration of \$1,000 per annum. The appointment is made by the Director of the Laboratory of Hygiene subject to the approval of the Provost and the Board of Trustees.

THE GEORGE B. WOOD FELLOWSHIP IN HYGIENE was established in 1912. It is designed to train teachers of Public Hygiene. The holder is expected to devote a year to assisting in class room instruction, in giving demonstrations illustrating special lines of investigation that he may be carrying on during the year. The holder of the Fellowship receives the remuneration of \$700 per annum. The appointment is made under the same conditions as those applying to the Thomas A. Scott Fellowship.

General regulations regarding the above two Fellowships will be found in the general catalog.

THE WOODWARD FELLOWSHIP IN PHYSIOLOGICAL CHEMISTRY (see page 96).

THE ROBERT ROBINSON PORTER FELLOWSHIP IN RESEARCH MEDICINE was established in 1912 for the purpose of offering an opportunity to individuals who desire to devote a year or more to investigation in the Medical Sciences. The holder of the Fellowship receives a remuneration of \$600 per annum. The appointment dates from July 1st of each year and the award is made by the Professor of Research Medicine subject to approval by the Board of Trustees.

THE ROBERT M. GIRVIN FELLOWSHIP IN RESEARCH MEDICINE was established in 1913. Its purpose is similar to that of the Porter Fellowship and appointment is made in the same way. The compensation is \$650.

THE HENRIETTA HECKSHER FELLOWSHIP IN MEDICAL RESEARCH was established in 1913 for the purpose of offering an opportunity to individuals who desire to devote at least one-half of their time to medical research under the direction or supervision of the Professor of Medicine for a period of at least one year. The holder of the Fellowship receives a remuneration of about \$500 per annum. The award is made by the Professor of Medicine subject to approval by the Board of Trustees.

The term research shall be strictly construed and shall not include teaching or other work not tending to enlarge the boundaries of medical knowledge.

THE SAMUEL DIXON FELLOWSHIP IN BACTERIOLOGY (see page 97).

PART V.

BUILDINGS AND EQUIPMENT.

LABORATORIES OF PATHOLOGY, PHYSIOLOGY AND PHARMACOLOGY.

The LABORATORIES OF PATHOLOGY, PHYSIOLOGY and PHARMACOLOGY were formally opened June, 1904. This building is unsurpassed in facilities and equipment for graduate and undergraduate work. The building is two stories in height, above a high basement, and measures 340 feet front by nearly 200 feet in depth. The long front faces north, securing a maximum amount of light for laboratory purposes. All along the front are arranged small rooms for research, rooms for professors and their assistants, libraries, etc., these opening into a private corridor so that those employed in these rooms may be free from interruption by persons passing through the main halls. Perfect lighting of all the laboratories has been obtained through the front or through large courts, which separate the two main parallel groups of rooms.

In the basement of the building the entire north front is occupied by the research laboratories of the department of physiological chemistry; the west wing to the museum of applied anatomy, the laboratories of operative surgery, bandaging and operative obstetrics. In the southern portion are various rooms for prosection and anatomical and pathological preparation; and the large laboratory of pharmacy.

The first floor of the building is devoted to physiology and pharmacology and to the laboratories of research medicine. The portion assigned to the first consists of laboratories for practical instruction, for general research work, for subsection teaching, rooms for the professor and assistants, etc. The section for pharmacology consists of a large general laboratory for teaching practical pharmacology, rooms for original research, etc. An equivalent portion of the southern part of this floor is given to the laboratories of research medicine. The second floor is devoted mainly to pathology, the entire north front being given over to laboratories for advanced students in pathology, professors' rooms, administrative offices and to the special research and assistants' rooms. The wings accommodate the laboratory of experimental pathology, the museum, the

demonstration-room and the laboratory of comparative pathology and tropical medicine. The front of the laboratory of normal and pathological histology consists almost entirely of glass and looks north into a spacious court. Another section of this floor, also looking into the court, is subdivided into smaller laboratories for instruction in neuropathology and surgical pathology, and in osteology.

Besides numerous laboratories, research-rooms, etc., there are four lecture-rooms in the building, two of these being demonstration-rooms with a seating capacity of 185; the other being lecture-rooms with a seating capacity of 300. The building is entirely fireproof, of the most modern construction, supplied with power, electric light, and many kinds of accessories for promoting the teaching and research work.

LABORATORIES OF CHEMISTRY AND ANATOMY.

THE CHEMICAL LABORATORIES occupy the first, second and third floors of the Robert Hare Laboratory building; on the second floor is the laboratory of general chemistry and toxicology, and on the third floor that of physiological chemistry. In addition to the main rooms, there are smaller rooms provided with an adequate number of balances for quantitative work, and special rooms set apart for research.

THE ANATOMICAL LABORATORY is at the top of the building and is 140 feet in length by 40 feet in width. It is lighted by windows on all sides, and by skylights. The most perfect ventilation is thus secured. There are numerous washstands, with hot and cold water, and private closets for the use of each student. Cleanliness is rigidly enforced. The cadavers furnished the dissecting-room are preserved by refrigeration. Dissection is legalized in Pennsylvania.

LABORATORY OF HYGIENE.

ALEXANDER C. ABBOTT, M.D., *Director.*

THE LABORATORY OF HYGIENE was formally opened on February 22, 1892. The building was the gift of the late HENRY CHARLES LEA, of Philadelphia, and the equipment was provided through the munificence of the late HENRY C. GIBSON, of Philadelphia. The building is devoted to graduate and undergraduate work in bacteriology, hygiene and preventive medicine. The student laboratory is a commodious, well-lighted and heated room, with a seating capacity for eighty-six students. Each student is supplied with an individual microscope, and with such apparatus as is necessary to conduct elementary studies in Bacteriology.

CLINICAL LABORATORY.

Several years ago an extension was made to the University Hospital to accommodate the medical dispensaries, medical amphitheatre and clinical conference-room, and on the top floor two large laboratories for the teaching of clinical pathology and for the routine laboratory investigation of the hospital cases. The larger room is equipped with desks for the use of the fourth-year students, giving accommodations for 150 men. Each student of the fourth-year class is assigned a desk and is supplied with an outfit including all the ordinary apparatus required in the examination of blood, urine, stomach contents and other secretions or excretions. He is required to supply himself with a microscope so that he will be enabled to conduct all clinical examinations on cases assigned to him in the hospital wards or elsewhere.

Adjoining the fourth-year laboratory is a smaller room equipped in a similar manner and capable of accommodating fifty students each with a working desk. Members of the third-year class are here instructed in clinical laboratory methods. The class is divided into four sections, each of which is assigned one day per week throughout the year. The course covers completely the important laboratory methods of investigation of blood, urine, stomach contents, pathological exudates, secretions, excretions, etc.

A third room accommodates the Staff Laboratory, where the Pathological Resident of the hospital, under the direction of an Instructor, carries on all the preliminary examinations of materials sent from the wards, makes all blood examinations, Widal tests, etc. Subsequent examinations are often made by students of the fourth-year class to whom the cases in the wards are assigned under suitable direction.

WISTAR INSTITUTE OF ANATOMY AND BIOLOGY.

MILTON J. GREENMAN, M.D., Sc.D., *Director.*

HENRY H. DONALDSON, Ph.D., Sc.D., *Professor of Neurology.*

HELEN D. KING, Ph.D., *Assistant Professor of Embryology.*

SHINKISHI HATAI, Ph.D., *Assistant Professor of Neurology.*

J. MACPHERSON STOTSENBURG, M.D., *Instructor in Anatomy.*

CHI PING, Ph.D., *Fellow in Anatomy.*

LYDA MAY DEGENER, *Research Assistant.*

CLARA N. PERINE, *Librarian.*

C. BOWYER VAUX, *In Charge of Publications.*

The WISTAR INSTITUTE, incorporated in 1892 by the University of Pennsylvania and General Isaac J. Wistar, is the first American University Institute devoted to advanced study and research in anatomy and biology.

Through the munificence of the late General Isaac J. Wistar the Institute was established and endowed not only for the advancement of research in anatomy, but also for the preservation and increase of the anatomical museum originally known as the Wistar or Wistar and Horner Museum. The original museum, founded in 1808 by Professor Caspar Wistar, was used as a teaching museum for students of medicine in the University of Pennsylvania. Its development along broader lines, since the organization of the Institute, has greatly increased its scientific value both to the medical students of the University and to biological students throughout the country. It has now become the depository for research materials which are open, under suitable regulations, to the use of capable investigators from all Institutions, and through its Advisory Board it has established itself as a central anatomical institute.

The Museum is open to the public as well as to students daily, except Sundays and holidays, from 9 A. M. to 4 P. M., Saturdays from 9 A. M. to 12 M.

Well equipped laboratories and a biological library adjoin the Museum and every facility is provided here for the work of investigators. The chief resources of the Institute are, at the present time, directed to researches in Comparative Neurology, Comparative Embryology and Genetics. No undergraduate teaching is done in the Institute, but arrangements can be made with the Director whereby advanced students or graduates in medicine may be afforded the facilities for research offered by the Wistar Institute.

The Institute publishes the five principal, independent anatomical journals of the United States, namely: *Journal of Morphology*, *The Journal of Comparative Neurology*, *The American Journal of Anatomy*, *The Anatomical Record*, and *The Journal of Experimental Zoölogy*. In these journals appears a large portion of the anatomical research work done in this country. In addition the Institute also publishes a series known as *American Anatomical Memoirs*, in which appear such monographs as are too extensive to be published in the journals; and the *Bulletin of the Wistar Institute* published at irregular intervals and containing material relating more especially to the work of the Institute.

WILLIAM PEPPER CLINICAL LABORATORY.HERBERT FOX, M.D., *Director.**Associates.*

SAMUEL S. KNEASS, M.D.

THOMAS A. COPE, M.D.

DANIEL J. MCCARTHY, M.D.

CHARLES C. WOLFERTH, M.D.

D. L. FARLEY, M.D.

Volunteer Associates.

O. H. PERRY PEPPER, M.D.

T. G. McMILLAN, M.D.

WOODWARD FELLOW in Physiological Chemistry,

LEON JONAS, M.D.

SAMUEL DIXON Fellowship in Bacteriology,

FRANK B. LYNCH, M.D.

Resident Pathologist, F. W. HOEHN, M.D.

The WILLIAM PEPPER LABORATORY OF CLINICAL MEDICINE, erected through the generosity of the late Dr. William Pepper as a memorial to his father, adjoins the University Hospital. The purposes of the Laboratory are: to promote the interests of the patients by providing facilities for the prosecution of minute clinical studies and original researches, and to advance the interests of science by the publication of the results of such work. No instruction in the Laboratory is given to undergraduates.

The Associates and Volunteer Associates of the Laboratory are appointed for the purpose of carrying out certain lines of investigation for which they have special preparation. The Laboratory does not solicit post-graduate teaching, but has received a limited number of post-graduate students from time to time for the purpose of training them to carry on investigations.

The publications of the Laboratory are issued in the form of contributions, which are the collected reprints of articles issued from the Laboratory and published in various medical journals. One or two numbers, containing from fifteen to twenty or more separate articles, appear each year. A limited number of these may be had by interested persons on application.

The Woodward Fellowship in Physiological Chemistry was founded by George Woodward, M.D., to be filled by election by the Board of Managers of the Hospital of the University of Pennsylvania and the Board of Trustees upon nomination by the Director.

The incumbent shall give his full time to work in Physiological Chemistry at the Laboratory and publish only from it, under the Laboratory imprint.

The Samuel Dixon Fellowship in Bacteriology is held under similar conditions.

THE UNIVERSITY HOSPITAL.

| | |
|--------------------------------|--|
| MR. THOMAS ROBINS | } <i>Board of Managers of University Hospital.</i> |
| DR. THOMAS G. ASHTON | |
| MR. ROBERT E. HASTINGS | |
| MR. GEO. H. MCFADDEN | |
| MR. ARTHUR L. CHURCH | |
| MR. WM. W. CURTIN | |
| MR. A. A. JACKSON | |
| MR. CHARLES L. BORIE | |
| MRS. WM. W. ARNETT | |
| MRS. CHANCELLOR C. ENGLISH ... | |
| MR. JOHN C. BELL | |

The UNIVERSITY HOSPITAL is situated on the University Campus. It is one of the most important agents in the training of the students, an invaluable adjunct to the School of Medicine, and, together with the Out-Patient Department, furnishes ample provision for the teaching of clinical medicine according to the most approved methods. With accommodations for 400 patients, it also affords excellent facilities for bedside instruction. The Hospital Staff are all members of the Faculty of Medicine.

About ten positions as internes in the University Hospital are awarded annually to members of the Graduating Class of School of Medicine, selected from the twenty-five full time members of the class who have had the highest general average at the end of the third year of the course and from a like percentage or fraction of the men admitted to advanced standing ranked on their third year average.

The MATERNITY PAVILION, with a capacity of 66 beds, comprises a main building, to which the patients are admitted two weeks before delivery, two wings containing delivery rooms, and the ANNA DIKE SCOTT Amphitheatre. This department is under the charge of the Professor of Obstetrics. Under the supervision of the clinical staff, the students assist in cases of labor and make daily visits, during the puerperium, to the mother and child.

Four third-year students sleep in a dormitory near at hand and are summoned at night to see all cases of labor, etc.

The Maternity Pavilion and the Surgical Wing of the Hospital are being at present greatly enlarged. On the completion of these new additions, the capacity and equipment of the hospital will be much increased.

THE HENRY PHIPPS INSTITUTE.

UNIVERSITY COMMITTEE ON PHIPPS INSTITUTE

| | |
|-----------------------|--------------------------|
| PROVOST E. F. SMITH, | MR. THOMAS ROBINS, |
| MR. S. F. HOUSTON, | DR. CHARLES J. HATFIELD, |
| MR. ARTHUR L. CHURCH, | DR. ALFRED STENGEL, |
| MR. DAVID T. LAYMAN, | DR. A. C. ABBOTT, |
| DR. ALLEN J. SMITH. | |

ADVISORY COUNCIL,

DR. EDWARD MARTIN, *Commissioner of Health of Pennsylvania, ex-officio.*

DR. C. LINCOLN FURBUSH, *Director, Department Public Health and Charities, Philadelphia, ex-officio.*

MR. WILLIAM H. BALDWIN, *Washington.*

DR. HERMAN M. BIGGS, *New York.*

DR. LAWRASON BROWN, *Saranac Lake.*

DR. LIVINGSTON E. FARRAND, *Boulder, Col.*

DR. SIMON FLEXNER, *New York.*

DR. SAMUEL McCUNE LINDSAY, *New York.*

MR. FREDERICK L. HOFFMAN, *Newark, N. J.*

DR. JAMES ALEXANDER MILLER, *New York,*

DR. JOSEPH H. PRATT, *Boston.*

DR. THEOBALD SMITH, *Princeton, N. J.*

DR. WILLIAM H. WELCH, *Baltimore.*

DR. H. GIDEON WELLS, *Chicago.*

CONSULTING STAFF.

DR. ALFRED STENGEL, *Consulting Physician.*

DR. JOHN B. DEAVER, *Consulting Surgeon.*

DR. T. B. HOLLOWAY, *Consulting Ophthalmologist.*

DR. D. J. MCCARTHY, *Consulting Neurologist.*

DR. J. B. CARNETT, *Consulting Surgeon.*

STAFF.

DR. CHARLES J. HATFIELD, *Executive Director.*

Clinical and Sociological Department.

DR. H. R. M. LANDIS, *Director.*

Instructors.

DR. FRANK A. CRAIG.

DR. JOHN M. CRUCE.

DR. C. M. MONTGOMERY.

Clinical Assistants.

DR. ISADORE KAUFMAN,

DR. J. M. STERLING.

DR. HENRY M. MINTON.

Gynecologist.

DR. C. C. NORRIS.

Head Social Worker, MISS LUCINDA N. STRINGER.

Social Workers, MISS ABIGAIL M. STOUT (Pre-Natal Clinic); MISS CORA H. JOHNSON (Work Among Negroes); MISS ELEANORE H. BERKSTRESSER.

Superintendent of Hospital.

Pathological Department.†

*Director, *DR. PAUL A. LEWIS.*

Biological Division.

In Charge—DR. LEWIS.

Technical Assistant—MR. FRANCIS DODGE.

Chemical Division.

In Charge—MISS ELIZABETH HILL.

Technical Assistant—MISS MARION BUTTS.

The Henry Phipps Institute for the study, treatment and prevention of tuberculosis was established in 1903 by Mr. Henry Phipps, of New York, at Third and Pine streets, Philadelphia. The situation was chosen as being in a section of the city in which tuberculosis was most prevalent, and was made possible by a special law permitting the establishment of the Hospital within the city limits.

*On national duty in Navy.

† Since about May 1, 1918, the Laboratory has been used by the Government as a central laboratory for the Fourth Naval District, and as an adjunct to the U. S. Naval Medical School, Washington.

In February, 1910, Mr. Phipps transferred the Institute to the University of Pennsylvania, having previously engaged to erect an appropriate permanent building for its accommodation upon grounds gradually acquired with this in view. The new building, located at Seventh and Lombard streets, was completed in May, 1913. It is a beautiful and commodious edifice and embodies the most modern ideas of hospital, sanatorium and laboratory construction. The Institute is the first fully organized and equipped institution of the kind with University connection. An entire reorganization of the plan of work has been made by the University. The work is divided into distinct fields of activity, represented by two corresponding departments, the Laboratory or Research Department, and the Clinical and Sociological Department, each under its special director. An Advisory Council of fourteen members has been selected, composed of the most distinguished men of the country in the lines of work carried on by this Institute, who visit the Institution at least once each year.

On account of its connection with the University, the Institute offers facilities for study to the students of the University of Pennsylvania, especially those of the Medical School. Both by visits to the Institution and through the publication of the results of its investigations and research, the Institute has proven valuable both to students and physicians throughout the country interested in this special work.

LIBRARY FACILITIES.

The basis of the Medical Section of the University Library is formed by the Stillé Collection, presented by the late Alfred J. Stillé, to which additions have been made from the William Pepper Medical Foundation established by the late Dr. William Pepper. The section of Dermatology has been much enriched by the addition of the large and valuable library of the late Dr. Louis A. Duhring, who died on May 8, 1913, leaving his library, dermatological specimens, etc., to the University, together with funds for keeping up these collections. In addition to purchases, the Medical Section has grown considerably through gifts presented by a number of medical publishers, more particularly Messrs. W. B. Saunders, the J. B. Lippincott Company, Lea & Febiger and P. Blakiston's Son & Co. From most of these are received regularly the new publications issued by them. In addition to these, the University subscribes to about one hundred medical periodicals, which represent a choice selection of the leading medical periodicals of this country and Europe. Through

special funds the sets of all the more important periodicals and publications of medical societies have been completed.

A Department Library in the Medical Laboratory Building contains many text-books and periodicals transferred to it from the General University Library, and recently has received through bequest the surgical library of the late Dr. J. Wm. White and the physiological library of the late Dr. Isaac Ott.

LIBRARY OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA. In addition to the Medical Section of the University Library, students have access to the Library of the College of Physicians, the second largest medical library in the United States.

PART VI.

GENERAL INFORMATION.

ARRANGEMENT OF SESSION.

The academic year consists of one session, beginning on the last Friday in September, and ending at Commencement on the third Wednesday in June.

ACCOMMODATIONS FOR STUDENTS.

For information about students' dormitories, board and lodging, apply to Bursar's Office, College Hall.

TUITION FEES AND EXPENSES.

Under no circumstances are any changes made in the established fees.

First term fees are payable upon date of matriculation.

It is expected of every student, either before or by the time of entrance to the second-year class, that he will provide for himself, either by purchase, rental or otherwise, a microscope of a grade suitable for general medical work.

First Year.

| | |
|--|----------------|
| Matriculation fee | \$5.00 |
| For general tuition ticket, admitting to all the lectures, and including all the laboratory work assigned to this year | \$200.00 |
| Use of dissecting material (<i>four parts</i>) | \$2.00 a part. |
| Gymnasium and Houston Club fee | \$15.00 |

Second Year.

| | |
|--|----------|
| For general tuition ticket, admitting to all the lectures, and including all the laboratory work assigned to this year | \$200.00 |
| Gymnasium and Houston Club fee | \$15.00 |

Third Year.

| | |
|---|------------------|
| For general tuition ticket, admitting to all the lectures, and practical courses assigned to this year | \$200.00 |
| Use of material for operations in surgery | \$4.00 to \$6.00 |
| Gymnasium and Houston Club fee | \$15.00 |

Fourth Year.

| | |
|--|----------|
| For general tuition ticket, admitting to all the lectures, and the practical courses assigned to this year (no graduation fee) | \$200.00 |
| Gymnasium and Houston Club fee | \$15.00 |

Fees for Courses in Public Hygiene and in Tropical Medicine.

| | |
|--|----------------|
| General fee for the course in Public Hygiene, including diploma | \$150.00 |
| For single branch of this course | \$25.00 |
| Regular deposit, to cover breakage, etc., for entire course, or single branch | \$10.00 |
| General fee for course in Tropical Medicine | \$150.00 |
| Fee for single branch of this course from | \$15.00 upward |
| Fee for single graduate course in Phipps Institute from | \$50.00 upward |

RULES IN RELATION TO FEES.

All payments should be made to Horace R. Barnes, Bursar, Room 102, College Hall.

A matriculation fee of \$5.00 must be paid by all new students entering the University.

Late Registration Fee.—Beginning in September, 1917, students in the School of Medicine, who fail to register, or to complete registration by the satisfaction of all term obligations at the Bursar's Office, within two weeks after the opening day of either term of the University, shall be required to pay an additional fee of Five Dollars (\$5.00) for late registration.

If a student is transferred from one department to another, a second matriculation fee shall not be paid.

Every student shall upon entering the University make a deposit of \$10.00 to cover loss, damage, or breakage of University property, library fines, or any charge not paid by the student in some other way. A student whose deposit is by charges against it reduced to \$2.50 or less shall be required to pay a sum sufficient to restore the deposit to its original amount. No deposit or balance remaining on a deposit shall be finally repaid to a student until he shall have been graduated or shall have formally withdrawn from the University.

A student who repeats the studies of the year will be required to pay the full tuition fee.

ALLOWANCES IN CASE OF WITHDRAWAL, ETC.

A student who leaves the University within thirty days after the beginning of either the first or second term, and who shall have paid the full term's tuition fees, may receive a return of one-half of the tuition fees paid, but in no case shall the matriculation fee be returned.

EXAMINATIONS.

First Year.—The mid-year progress examination in Anatomy (including Osteology, Syndesmology, Myology, and such other subjects as may have been covered by the lectures on Anatomy before February 1), and final examination in Physiological Chemistry are held about February 1.

Final examinations at end of year: Anatomy and Bacteriology.

Second Year.—Progress examinations in Physiology and Materia Medica will be held about February 1, and final examination in General Pathology will be held at the same period.

Final examinations at the end of the year in Physiology, Pharmacology, Toxicology, and progress examination in Special Pathology.

Third Year.—Examinations in Ophthalmology and Hygiene will be held about February 1.

Final examinations at end of year: Medicine, Surgery, Obstetrics, Therapeutics, Applied Anatomy, Pathology and Third-year Specialties (Laryngology, Otology and Dermatology).

Fourth Year.—

Final examinations at end of year: Medicine, Surgery, Obstetrics, Gynecology and Fourth-year Specialties (Neurology and Neuro-pathology, Mental Diseases, Pediatrics and Genito-Urinary Surgery).

GRADUATION.

At the end of the fourth year a student who has passed all the required examinations satisfactorily will receive the degree of Doctor of Medicine under the following provisions:

1. The student must be 21 years of age, and of good moral character.

2. The student must have passed satisfactory examinations in all of the required branches of the curriculum, must have attended the practical instruction in all departments, and the last year of instruction must have been at this school.

3. The student must have attended at least twelve cases of Obstetrics.

4. The student must be present at Commencement, unless excused by the Dean of the Faculty.

SCHOLARSHIPS.

I. UNIVERSITY SCHOLARSHIPS. A competitive examination of candidates who have been accepted for enrollment in the Medical School, to fill three free scholarships is held annually. (In 1920, beginning on Monday, September 13, at 10 A. M., and continuing on the two following days in the Medical School.)

Detailed information about these scholarships may be had upon application to the Dean of the School of Medicine. Each candidate will be required:

First. To have satisfied the entrance requirements as stated on pages 24-29, and to have been accepted for enrollment.

Second. To furnish satisfactory evidence in writing from three reputable persons, that he is without means to defray the expenses of a medical education.

Third. To write a brief autobiography of about 300 words in length, which will serve as a test of his qualifications in orthography and grammar. This is to be written on Monday, September 13, at 10 A. M.

Fourth. To undergo examinations in the following subjects:*

1. Any two of these four languages:

(a) Latin (second and fourth books of Horace's *Odes*.)

(b) Greek (first four books of the *Iliad*.)—The examination will include prosody, syntax and Homeric dialect.

(c) French.—Elementary French, including grammar, prose composition (Joynes' *Minimum French Grammar and Reader*), and reading at sight in books of the grade of the following:

Francisque Sarcey, *Le Siege de Paris*.

Beaumarchais, *Le Barbier de Seville*.

Anatole France, *Le Crime de Sylvestre Bonnard*.

*A percentage of not less than 50 must be obtained in each one of the subjects in which a competitor undergoes examination, and an average percentage of at least 70 must be obtained on the whole examination that a competitor may have his name placed upon the eligible list. The appointments will be made from this eligible list.

- (d) German.—Elementary German, including Learned's *German Grammar*, Wesselhoeft's or Harris' *Prose Composition*, and reading at sight in books of the grade of the following:

Heine's *Harzreise*.

Eichendorff's *Aus dem Leben eines Taugenichts*.

Wildenbruch's *Das edle Blut*.

2. Any two of these three sciences:

- (a) Physics. (As in Gage's *Principles of Physics*—Goodspeed's Revision, *Crew's General Physics*, or Duff's *Text-book of Physics*.)
- (b) Chemistry. General; as in Richter's *Inorganic Chemistry* or its equivalent. Organic; as in H. T. Clarke.)
- (c) Zoölogy or Biology. (Zoölogy as in Galloway's *Text-book of Zoölogy* or Hegner's *College Biology*. Biology as in Needham's *General Biology*.)

Fifth. To pay an examination fee of \$5.00, which is not returned, but is accepted as the matriculation fee in case the candidate is successful.

Candidates who propose presenting themselves for examination, must present the certificates demanded by the second requirement of the competition, to the Dean *before September 1*. This requirement having been complied with, candidates will appear without further notice at the time stated for examinations.

II. PHILADELPHIA FREE SCHOLARSHIPS.—Under an agreement with the city of Philadelphia, fifty free scholarships exist in the University for the benefit of graduates of the public schools. The candidates for these scholarships are examined by the Board of Public Education, and award is made to those who reach the highest grade, as vacancies occur from year to year.

Under another agreement with the city of Philadelphia, seventy-five free scholarships exist in the University for the benefit of graduates from local schools in general. Information regarding the latter scholarships should be obtained from the Mayor's Office.

III. In addition, certain non-competitive scholarships are available, reference to which will be found in the General Catalogue.

PRIZES TO BE AWARDED, JUNE, 1920.

NOTE.—*Theses and Reports in competition for Prizes must be presented to the Dean on or before May 1. Prizes will not be awarded unless the work submitted reaches a high standard of excellence.*

THE ALUMNI MEDAL and a prize of \$50.00 is offered by the Society of the Alumni of the School of Medicine of the University, to the member of the Graduating Class who attains the highest general average in examinations. (Only those members of the Graduating Class who have taken the last three years of the course in Medicine at this University are eligible.)

THE DR. SPENCER MORRIS PRIZE.—The annual income, derived from the investment of Ten Thousand Dollars, will be awarded each year to that Medical Student of the Graduating Class who shall pass the best examination for the degree of Doctor of Medicine.

THE FREDERICK A. PACKARD PRIZE of One Hundred Dollars is offered by a friend of the University to the member of the Graduating Class who has proven to be the most proficient in the course in Clinical Medicine.

The Professor of Obstetrics offers a Prize of an obstetrical forceps to the member of the Graduating Class who furnishes the best report of a case of Obstetrics occurring in the University Maternity Hospital.

A Prize of a completely equipped obstetrical bag is offered by the Professor of Obstetrics to the member of the fourth-year class presenting the best notes on the conference and clinics of the fourth year in Obstetrics.

DR. A. O. J. KELLY PRIZE FUND.—Founded March 26, 1912, by contributions from friends of Dr. A. O. J. Kelly, deceased. The Kelly Prize will be given to a member of the Fourth Year Medical Class who has made an especially meritorious report of some clinical observation in the regular University work.

CHARLES A. OLIVER MEMORIAL PRIZE.—Founded June 16, 1913, by Dr. Charles A. Oliver. This Prize, in the form of a gold medal, will be given to "those students in the Graduating Class in the Department of Medicine who shall annually receive the highest average and pass the best examination in Ophthalmology."

APPOINTMENTS TO HOSPITAL.

The school strongly advises each graduate to undertake a term of service as interne in some good general hospital. Practically the entire class of 1919 have received appointment by competitive exam-

ination or otherwise; and there are each year more demands for graduates of the school for such service than can be accommodated.

The Bureau of Medical Education and Licensure of the State of Pennsylvania now requires that all applicants for licensure shall have completed a year as interne in a hospital of specified character.

SOCIETY OF THE ALUMNI OF THE SCHOOL ON MEDICINE.

President.—B. Franklin Stahl, '87.

Vice-Presidents.—Radcliffe Cheston, '83; Henry D. Jump, '93; Lewis H. Taylor, '80; Park Weed Willis, '91; William L. Harris, '92; Alexander R. Craig, '93.

Historian.—William Pepper, '97.

Secretary and Treasurer.—Floyd E. Keene, '04.

Executive Committee (for two years).—George E. de Schweinitz, '81; Lewis H. Adler, '88; George C. Ross, '91; M. Howard Fussell, '84; Robert G. Torrey, '06; O. H. Perry Pepper, '08; John Alexander, '16.

Executive Committee (for three years).—Thomas C. Kelly, '04; Frank B. Gummey, '88; A. C. Wood, '88; John B. Larson, T. Grier Miller, '11; Brooke M. Anspach, '97; Henry P. Brown, Jr., '12.

Executive Committee (for four years).—Charles K. Mills, '69; George A. Piersol, '77; *T. Grier Miller, '11; Herbert B. Carpenter, '89; J. H. W. Rhein, '90; John G. Clark, '91; Edward A. Shumway, '94.

Directors of General Alumni Society (for one year).—F. E. Keene, '04; M. Howard Fussell, '84; Morris Booth Miller, '89; Geo. Morris Piersol, '05; Robert G. Torrey, '06.

This society was founded in 1870, and is composed of graduates of the School of Medicine in good standing.

The Society is actively engaged in collecting detailed information regarding the Medical Alumni, and is now preparing a matriculate catalogue which will contain the historical data thus acquired.

A special arrangement has been made with the General Alumni Society whereby *The Alumni Register* has become the official organ

*To fill unexpired term of Dr. G. G. Davis.

of this Society; and a joint annual subscription of \$3 will include membership in both Societies, and one year's subscription to *The Alumni Register*.

Subscriptions should be sent to the Treasurer of the General Alumni Society, 704 Hale Building.

**THE PHILADELPHIA ALUMNI SOCIETY OF THE MEDICAL
DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA.**

President.—Henry D. Jump, '93.

Honorary Vice-President.—Provost Edgar F. Smith.

Vice-Presidents.—Clarence P. Franklin, '93; Paul J. Sartain, '86;
John J. Robrecht, '94.

Recording Secretary.—W. Oakley Hermance, '94.

Corresponding Secretary.—Stephen E. Tracy, '98.

Treasurer.—Herbert B. Carpenter, '89.

Directors.—Benj. Franklin Stahl, '87; Harvey E. Schock, '02;
S. H. Brown, '99; S. Lewis Zeigler, '85; Henry J. Off, '96.

This Society was founded in the spring of 1892 among the alumni of the Medical Department of the University living in and near Philadelphia. The meetings are held on the third Saturday evenings of February, May and November, and are of a purely social character. The membership is composed of graduates of the School of Medicine. Those desiring to become members are requested to send their names to the Secretary. The dues are two dollars per annum.

DEGREES AND PRIZES—1919.....	110

At a public Commencement, held Thursday, June 19, 1919, at the Metropolitan Opera House, the degree of Doctor of Medicine was conferred by Edgar F. Smith, Ph.D., Sc.D., L.H.D., LL.D., Provost, upon the following candidates:

| NAME. | POST OFFICE. | STATE. |
|-----------------------------|----------------|----------------|
| Abrams, Wilmer David | Ebensburg | Pennsylvania |
| Adler, Francis Heed | Philadelphia | do. |
| Anders, Walter Lesesne | Palestine | Texas |
| Bachman, Rowland Wilson | Allentown | Pennsylvania |
| Bailey, Kenneth Hubert | Wakefield | North Carolina |
| Balch, Ensign Christopher | Greenwich | New York |
| Barrett, Ralph Lester | East Sumner | Maine |
| Bausch, Elmer Henry | Lynnville | Pennsylvania |
| Beideman, Joseph Ellsworth | Norristown | do. |
| Bell, Ralph Emerson | Munhall | do. |
| Berge, James Hallard | Davenport | Washington |
| Besser, Joseph Philip | Philadelphia | Pennsylvania |
| Blackburn, Walter James | Stahlstown | do. |
| Boaz, Emmett Daniel, 2d | Covesville | Virginia |
| Bobb, Arthur Alfred | Herndon | Pennsylvania |
| Bogaev, Harry Abraham | Philadelphia | do. |
| Bogran, Roman | Pto. Cortes | Honduras |
| Boucher, Samuel Doid | Clymer | Pennsylvania |
| Broadwell, Stuart, Jr. | Springfield | Illinois |
| Broughton, Needham Bryant | Raleigh | North Carolina |
| Burden, Verne Gerard | St. Mary's | Pennsylvania |
| Burns, Robert Emmett | Madison | Wisconsin |
| Burrow, James | Bristol | Tennessee |
| Campbell, Edward Hastings | Warren | Pennsylvania |
| Carr, Joseph Aloysius | Olyphant | do. |
| Clark, Roscoe Loyal | Dayton | Washington |
| Comfort, John Burke | Trenton | New Jersey |
| Cook, William Bell | Seattle | Washington |
| Copeland, Clarence Allen | Meadville | Pennsylvania |
| Coulter, Harry Gladstone | New Wilmington | do. |
| Daghir, Neim Moses Abu | Eastport | Maine |
| Darmstadter, Herbert Joseph | Philadelphia | Pennsylvania |
| Debayle, Luis Manuel | Leon | Nicaragua |
| Denney, John DeWitt | Columbia | Pennsylvania |
| Eaton, Francis Henry | Wellsboro | do. |
| Flotte, Camille Joseph, Jr. | Norristown | do. |
| Ford, Elizabeth Woolston | Moorestown | New Jersey |
| Gilmour, William Roger | Frankford | Pennsylvania |
| Girardeau, Claude | Philadelphia | do. |
| Glenn, Harriet Elizabeth | Franklin | do. |
| Grant, Francis Clark | Philadelphia | do. |
| Hahn, Myron Jacob, Jr. | Rockland | Maine |
| Hamilton, Aubrey Horace | Philadelphia | Pennsylvania |
| Hamilton, Edwin Gail | Warren | do. |
| Harden, Graham | Burlington | North Carolina |
| Hare, Francis Alfred | Wheeling | West Virginia |
| Hawthorne, Herbert Reid | Philadelphia | Pennsylvania |
| Heck, Alfred Leon | Wilmington | Delaware |
| Herrman, Clinton Simon | Philadelphia | Pennsylvania |
| Hoffman, LaRue Myers | Danville | do. |
| Houck, Willis Alfred | Clymer | do. |

| NAME. | POST OFFICE. | STATE. |
|---------------------------------|----------------|----------------|
| Hudson, Ellis Herndon | Decatur | Illinois |
| Irwin, James Robin | Belleville | New Jersey |
| Jerrick, Walter Fitzgerald | Georgetown | British Guiana |
| Johnston, Charles Louis | Knoxville | Tennessee |
| Johnston, Florence Dorothy | Cedar Rapids | Iowa |
| Jones, Alden Bliss | Swarthmore | Pennsylvania |
| Kerper, Edward Pelham | Harrisburg | do. |
| Kershner, Ammon George | Norristown | do. |
| Kile, Robert Francis | Valley Centre | Kansas |
| King, Merrill Jenks | Whitewater | Wisconsin |
| Klein, Robert Jacob | Springfield | Massachusetts |
| Kohlbraker, George Henry | Shamokin | Pennsylvania |
| Kornblum, Karl | Evansville | Indiana |
| Kridel, Louis Martin | Pittsburgh | Pennsylvania |
| Leff, Benjamin | Philadelphia | do. |
| Lew, Don Geate | Seattle | Washington |
| Li, Kuang Hsun | Soochow | China |
| Loewen, Richard Keshner | Tamaqua | Pennsylvania |
| McCarthy, Arthur M. | Blossburg | do. |
| McNelis, Joseph Aloysius | Hazleton | do. |
| McNutt, Edwin Roland | Vandergrift | do. |
| MacDougall, Lorne Taylor | Scranton | do. |
| Mann, Arthur Horton | Philadelphia | do. |
| Masters, Harry | Centreville | do. |
| Mitchell, Roy Colonel | Mt. Airy | North Carolina |
| Mittelman, Harry Milton | Old Forge | Pennsylvania |
| Moll, Arthur Mackenzie | Flint | Michigan |
| Musgrave, John Knox | Pittsburgh | Pennsylvania |
| Nast, Jerome | Cerry | do. |
| Newhart, Carl Jeremiah | Cherryville | do. |
| Noble, John William | Allentown | do. |
| Orenstein, Archie | Wilmington | Delaware |
| Parsons, Louis Smith | Parsonsborg | Maryland |
| Pendleton, Ralph Cooper | Salt Lake City | Utah |
| Perry, Matthew White | Durant's Neck | North Carolina |
| Pfeiffer, Henry March | Cedar Falls | Iowa |
| Pierson, Carl Leonard | Netcong | New Jersey |
| Pigott, Albert William | Tylertown | Mississippi |
| de la Puente, Carlos Alcibiades | Lima | Peru |
| Reilly, James Joseph | Scranton | Pennsylvania |
| Rider, Evelyn Amanda | Ellicott City | Maryland |
| Rosenberg, Milton Maurice | Scranton | Pennsylvania |
| Ryan, Thomas Joseph | Gilberton | do. |
| Sawyer, Samuel Rutherford | Tuckerton | New Jersey |
| Schlier, Earle Brooks | Hazleton | Pennsylvania |
| Schmoele, John Moore | Portsmouth | Virginia |
| Scott, John Porter | Philadelphia | Pennsylvania |
| Sill, John Brooks | do. | do. |
| Skavlem, John Harvey | Stoughton | Wisconsin |
| Stanford, William Raney | Teer | North Carolina |
| Steffin, Michael Angelo | Philadelphia | Philadelphia |
| Stewart, Alexander | Shippensburg | do. |
| Stranquist, Henry Carlos | Bingham City | Utah |
| Sugg, Eugene Sifax | Chapel Hill | North Carolina |
| Sweaney, Hunter McGuire | Durham | do. |
| Tayloe, David Thomas, Jr. | Washington | do. |
| Taylor, Herbert William | Malvern | Pennsylvania |
| Taylor, John Goodwin | Chester | do. |
| Taylor, Kempton Potter Aiken | Chestnut Hill | do. |

| NAME. | POST OFFICE. | STATE. |
|---------------------------------|--------------|----------------------|
| Taylor, Samuel Paul | Altoona | Pennsylvania |
| Taylor, William Grimsley | Greensboro | North Carolina |
| Thorington, James Monroe | Philadelphia | Pennsylvania |
| Trapold, Augustine Charles, Jr. | Wilkes-Barre | do. |
| Upham, Charles | Bayonne | New Jersey |
| Urban, Kay Bonner | Bullard | Texas |
| Voegelin, Adrian Walter | Philadelphia | Pennsylvania |
| Waygood, James Jamison | Glenside | do. |
| Wilder, Charles McDuffie | Washington | District of Columbia |
| Williams, Henry Ward | Rochester | New York |
| Wilson, Robert Gladstone | Swannanoa | North Carolina |
| Zellmer, Carl Edward | Antigo | Wisconsin |

February 21, 1920. Colon, Rafael, Arecibo, Porto Rico as of Class of 1919.

Of the foregoing there were from:

| | | | |
|---------------------------|---|---------------------|-----|
| Delaware..... | 2 | New York..... | 2 |
| District of Columbia..... | 1 | North Carolina..... | 11 |
| Illinois..... | 2 | Pennsylvania..... | 64 |
| Indiana..... | 1 | Tennessee..... | 2 |
| Iowa..... | 2 | Texas..... | 2 |
| Kansas..... | 1 | Utah..... | 2 |
| Maine..... | 3 | Virginia..... | 2 |
| Maryland..... | 2 | Washington..... | 4 |
| Massachusetts..... | 1 | West Virginia..... | 1 |
| Michigan..... | 1 | Wisconsin..... | 4 |
| Mississippi..... | 1 | Foreign..... | 6 |
| New Jersey..... | 6 | | |
| | | Total..... | 123 |

PRIZES, 1919.

THE ALUMNI MEDAL and prize of \$50 is offered by the Society of the Alumni of the School of Medicine of the University to the member of the Graduating Class who attains the highest general average in examinations. (Only those members of the Graduating Class who have taken the last three years of the course in Medicine at this University are eligible.) To RALPH LESTER BARRETT.

THE DR. SPENCER MORRIS PRIZE.—The annual income derived from the investment of ten thousand dollars is awarded each year to that Medical Student of the Graduating Class who shall pass the best examination for the degree of Doctor of Medicine. To MATTHEW WHITE PERRY.

THE DR. SPENCER MORRIS PRIZE.—(Medico-Chirurgical).—For the highest general average in the Senior Medical Class. Awarded to LA RUE MYERS HOFFMAN.

THE FREDERICK A. PACKARD PRIZE of one hundred dollars is offered by a friend of the University to the member of the Graduating Class who has proven to be the most proficient in the course in Clinical Medicine. To FRANCIS CLARK GRANT.

The Professor of Obstetrics offers a prize to the member of the Graduating Class who furnishes the best report of a case in the University Maternity Hospital. To EARLE BROOKS SCHLIER.

A prize is offered by the Professor of Obstetrics to the member of the fourth-year class presenting the best notes on the conferences and clinics of the fourth year in Obstetrics. To FRANCIS HEED ADLER.

DR. A. O. J. KELLY PRIZE FUND.—Founded March 26, 1912, by contributions from friends of Dr. A. O. J. Kelly, deceased. The Kelly Prize is given to a member of the Fourth-year Medical Class who had made an especially meritorious report of some clinical observation in the regular University work. To JAMES MONROE THORINGTON.

CHARLES A. OLIVER MEMORIAL PRIZE.—Founded June 16, 1913, by Dr. Charles A. Oliver. This prize, in form of a gold medal, is given to "those students in the Graduating Class in the Department of Medicine who shall annually receive the highest average and pass the best examination in Ophthalmology." To RALPH LESTER BARRETT.

THE SCHOOL OF MEDICINE.

FOURTH-YEAR CLASS.

| NAME. | RESIDENCE. | CITY ADDRESS. |
|--|------------------------|--|
| Armstrong, William Jefferson A.B. (Allegheny) | Kane | Dorm. 407 Leidy |
| Arnold, Duma Carroll | Neuse, N. C. | 3715 Locust St. |
| Bahnmler, Edwin Conrad A.B. (Colgate) | Wilkes-Barre | 263 S. 38th St. |
| Barber, Wilford | Centreville, Utah | Children's Hospital, 18th and Bainbridge Sts. |
| Barchfeld, Charles Custer B.S. (Franklin and Marshall) | Somerset | Dorm. 320 Leidy |
| Barnhart, Arthur David | Scottdale | 3618 Chestnut St. |
| Bartecchi, Ferdinand Aloysius | Scranton | 123 S. 36th St. |
| Behrens, Charles Frederick | Audubon, N. J. | [Audubon, N. J.] |
| Biro, Louis Pacanoosky | Newark, N. J. | 124 S. 39th St. |
| Blumenthal, Isabel | New York, N. Y. | 3320 Walnut St. |
| Bouvy, Leo Benedict A.B. (Missouri) | Kansas City, Kan. | Misericordia Hospital |
| Bower, Wallace B.Litt. (Princeton) | Scranton | Dorm. 339 Foerderer |
| Brennan, Thomas Connor | Shenandoah | 3607 Locust St. |
| Breuning, Paul Harold | Tacoma, Wash. | Dorm. 448 Lippincott |
| Brinton, Samuel Jervis | Centre Square | 3440 Walnut St. |
| Brown, Ambrose McChesney A.B. (Washington and Lee) | Buena Vista, Va. | 3610 Walnut St. |
| Brown, John Carlisle, Jr. | Vincentown, N. J. | Dorm. 335 Franklin |
| Brown, Philip Walling A.B. (Colorado) | Colorado Springs, Col. | 3807 Spruce St. |
| Brown, Rolla Oscar | Pittsburgh | 3610 Walnut St. |
| Burrows, James Henry | Williamsport | 3607 Locust St. |
| Butler, James William B.S. (Fordham) | Wilmington, Del. | 3610 Walnut St. |
| Campion, Richard Joseph | Philadelphia | 827 N. 63d St. |
| Cannon, John Francis Xavier A.B. (Pennsylvania) | do. | 1236 N. Front St. |
| Cheney, William Clem | Farmington, Utah | 25 N. 34th St. |
| Clark, Robert Nesbitt A.B. (Lafayette) | Wilkes-Barre | Dorm. 402 Brooks |
| Coffey, Jesse Osborne, Jr. A.B. (Missouri) | Queen City, Mo. | 3700 Locust St. |
| Coston, Laila Ann A.B. (Adelphia) | Scranton | The Bartram. |
| Cress, William Joseph | Girardville | Misericordia Hospital |
| Davis, Luther C. A.B. (Missouri) | Fairmont, W. Va. | 2601 Lombard St. |
| Del Duca, Vincent Peter | Camden, N. J. | [939 S. 4th St.] |
| De Walt, Horace Edward | Sioux City, Ia. | 3807 Spruce St. |
| Dewar, William Banks B.S. (North Carolina) | Raleigh, N. C. | 3611 Locust St. |
| Dodd, William Earle | Martinsburg, W. Va. | 3223 Sansom St. |
| Ellis, Alexander | Camden, N. J. | [502 Berkeley St.] |
| Esler, James Wallace A.B. (Washington and Jefferson) | Tarentum | 3440 Walnut St. |

| NAME. | RESIDENCE. | CITY ADDRESS. |
|---|---------------------|-------------------------|
| Evans, John Lane A.B. (Missouri) | Brookfield, Mo. | 3700 Locust St. |
| Fager, Charles Buffington | Harrisburg | Dorm. 381 Lippincott |
| Fewell, John May | Rock Hill, S. C. | 3715 Locust St. |
| Fewell, William Sadler | do. | do. |
| Fiske, Seymour A.B. (Wisconsin) | Philadelphia | 3319 Hamilton St. |
| Floyd, John Smith | Butte, Mont. | Dorm. 338 Foerderer |
| Focht, John Hill | Plantsville, Conn. | Dorm. 43 Memorial Tower |
| Foshay, Lee | Montclair, N. J. | 3608 Walnut St. |
| Freed, Cecil Forest | Parkersburg, W. Va. | 3914 Sansom St. |
| Freeman, Walter Jackson, Jr. A.B. (Yale) | Philadelphia | 1832 Spruce St. |
| Gabriel, Albert Heinrich | Montclair, N. J. | Dorm. 410 Leidy |
| Gardner, Leon Lloyd A.B. (Pomona) A.M. (Pennsylvania) | Claremont, Calif. | 3440 Walnut St. |
| Gilbert, Earl Brooks B.S. (Allegheny) | Scottdale | 3610 Walnut St. |
| Ginsberg, Arthur Morris A.B. (Missouri) | Kansas City, Mo. | 4043 Locust St. |
| Glover, Lawrence Litchfield A.B. (Princeton) | Haddonfield, N. J. | [232 King's Highway E.] |
| Grebe, Louis Frederick | Stony Creek Mills | Dorm. 355 Class of '87 |
| Greenberg, Henry Harry | Philadelphia | 222 Green St. |
| Hall, Perry Oliver | Harrisburg | Dorm. 408 Leidy |
| Hart, Patricia B.S. (Kansas) | Grenola, Kan. | 3601 Chestnut St. |
| Harvey, John, Jr. B.S. (North Carolina State University) | Snow Hill, N. C. | 3601 Locust St. |
| Hazen, John Wallace | Hartstown | Dorm. 307 Brooks |
| Heiken, Charles Anthony A.B. (Villanova) | Pottsville | 3440 Walnut St. |
| Holloway, Jackson Kenneth A.B. (North Carolina) | Raleigh, N. C. | 3700 Walnut St. |
| Houlihan, Carl Thomas | Scranton | 3607 Locust St. |
| Hudock, John | Mt. Carmel | 3127 N. 26th St. |
| Jaeger, James Rudolph | Clarksville, Mo. | 2601 Lombard St. |
| Jaffe, Maurice | Philadelphia | 3115 Columbia Ave. |
| Jaquish, Charles Joseph | Mansfield | 20 S. 36th St. |
| Jaso, James | Newark, N. J. | 3720 Locust St. |
| Jepson, Paul Newton A.B. (Carleton) | Minneapolis, Minn. | 3807 Spruce St. |
| Johnson, George B.S. (North Carolina) | Wallace, N. C. | 3416 Powelton Ave. |
| Kaplan, Samuel | Philadelphia | 436 W. Jefferson St. |
| King, Arthur H. B.S. (Waynesburg) | Waynesburg | Dorm. 421 McKean |
| Kinlaw, William Bernard | Rocky Mount, N. C. | 3611 Locust St. |
| Knapp, Joseph Scott A.B. (Grove City) | Fredonia | 3706 Walnut St. |
| Knauer, Charles Hull, Jr. | Milton | 3607 Locust St. |
| Knight, Albert Preston | Pottsville | Dorm. 310 Brooks |
| Koelsch, William Alfred B.S. (Wisconsin) | Boise, Ida. | Dorm. 412 Leidy |
| Kosker, John J. | Nanticoke | 515 N. 34th St. |
| Kressler, Kenneth Wolfinger Ph.B. (Lafayette) | Easton | 3602 Walnut St. |
| Lerch, Claude Brinser | Highspire | do. |

| NAME. | RESIDENCE. | CITY ADDRESS. |
|---|----------------------|-----------------------|
| Lindsey, Walter Hirst A.B. (Westminster) | New Castle | Dorm. 34 Graduate |
| Locke, LeRoy Dyer B.S. (Pennsylvania State) | Bellefonte | 3619 Locust St. |
| Luqueer, Fred Augustus B.S. (Alabama) | Olathe, Col. | 3908 Spruce St. |
| A.B. (Colorado) | | |
| Lyday, Russell Osborne | Brevard, N. C. | 3416 Powelton Ave. |
| McKnight, Roy Bowman A.B. (North Carolina) | Charlotte, N. C. | 3715 Locust St. |
| Matthews, Robert A.B. (Trinity, N. C.) | Winton, N. C. | 3609 Locust St. |
| Merkle, Ralph Francis B.S. (Muhlenberg) | Allentown | 3440 Walnut St. |
| Milliken, Howard Elliott | Harrisburg | 3610 Walnut St. |
| Mills, William | Arapahoe, Neb. | do. |
| Minigan, Walter Dency B.S. (Dartmouth) | Manchester, N. H. | 3429 Walnut St. |
| Morgan, Julia A.M. (Dickinson) | Carlisle | 120 S. 34th St. |
| Mortimer, Earle Lincoln | Harrisburg | 3607 Locust St. |
| Nast, Max Schaul B.S. (Pennsylvania) | Butler | Dorm. 308 Brooks |
| Nelson, Moses Russell | Bryn Mawr | [20 Prospect Ave.] |
| Oast, Thomas Edgar | Portsmouth, Va. | 3601 Locust St. |
| Owens, Russell Wayne B.S. (Utah) | Salt Lake City, Utah | 3700 Walnut St. |
| Pangburn, Edward Weddell B.S. (Bucknell) | Elizabeth | 3440 Walnut St. |
| Petry, Howard Kistler A.B. (Wesleyan) | Wilkes-Barre | 3607 Locust St. |
| Pettit, William Alfred | Salt Lake City, Utah | 1724 Cherry St. |
| Pittam, Radford Frederick A.B. (Missouri) | Kansas City, Mo. | 3700 Walnut St. |
| Rapoport, Frank M. | Philadelphia | 743 S. 3d St. |
| Riegel, Donald | do. | 5814 Baltimore Ave. |
| Rowan, Henry Madison A.B. (Washington and Lee) | Greenville, Va. | Dorm. 423 Franklin |
| Sabel, Meyer | Philadelphia | 6138 Christian St. |
| Saiki, Yoshio M.D. (Tokyo Charity Hos- pital Medical College) | Kioto, Japan | 4710 Hazel Ave. |
| Schatz, Charles Howard | Philadelphia | 2838 Richmond St. |
| Schofield, Frederick Sewall A.B. (Pennsylvania) | do. | 4402 Walnut St. |
| Schrier, Philip Charles B.S. (Mississippi) | Vicksburg, Miss. | 248 S. 39th St. |
| Semans, Thomas Breckinridge B.S. (Guilford) | Uniontown | 3440 Walnut St. |
| Seth, John Ambrose | Lucinda | Misericordia Hospital |
| Smith, Robert William B.S. (Mississippi) | Canton, Miss. | 3609 Locust St. |
| Smith, Vincent Joseph | New Britain, Conn. | 3607 Locust St. |
| Sparrow, Thomas De Lamar B.S. (Davidson) | Washington, D. C. | 3601 Locust St. |
| Spear, Willard Henry | Cleveland, Ohio | 3956 Pine St. |
| Starr, Isaac, Jr. B.S. (Princeton) | Philadelphia | Stenton Ave. |
| Stecher, Hilmar Armin | do. | 3715 Locust St. |

| NAME. | RESIDENCE. | CITY ADDRESS. |
|--|--------------------|---------------------|
| Stitt, Hugh Iseman A.B. (Gettysburg) | Ford City | 3459 Walnut St. |
| Stokes, Joseph, Jr. A.B. (Haverford) | Moorestown, N. J. | 3539 Locust St. |
| Stone, Russell Bennett Ph.B. (Lafayette) | Easton | 3440 Walnut St. |
| Sunder, Joseph Ellsworth | Jeannette | 3607 Locust St. |
| Swan, Theodore Strong B.S. (Geneva) | New Brighton | 3610 Walnut St. |
| Thompson, Hugh Gravis A.B. (Hampden Sidney) | Charleston, W. Va. | 3601 Walnut St. |
| Tuberty, Harold Myron | Sayre | 447 S. 43d St. |
| Tucker, Francis Henry A.B. (Southwestern) | Nacogdoches, Tex. | Dorm. 413 Franklin |
| Tuff, Louis | Philadelphia | 1647 S. 54th St. |
| Urba, Edward Francis | Waterbury, Conn. | Dorm. 422 McKean |
| Veasey, Clarence Archibald, Jr. | Spokane, Wash. | Dorm. 330 Franklin |
| Veneroso, Frank | Hazleton | 3243 Chestnut St. |
| Ward, Vernon Leroy | Willard, Utah | 3417 Hamilton St. |
| Waxman, Harold Emanuel | Pittsburgh | Dorm. 236 Fidler |
| Whelan, George Leo | Philadelphia | 124 S. 39th St. |
| Williamson, Carl Sneed A.B. (Missouri) | Columbia, Mo. | 3700 Walnut St. |
| Wyant, Richard Philipp | McKeesport | Dorm. 369 Hopkinson |
| Yao, Erh-Chang | Shanghai, China | 3905 Spruce St. |
| Ziemer, Harry S. B.S. (Muhlenberg) | Adamstown | 3935 Pine St. |
| Zubieta, Ernest | Panama | 3611 Locust St. |

THIRD-YEAR CLASS.

| | | |
|---|----------------------|--------------------|
| Amshel, Frederick | Pittsburgh | 206 S. 36th St. |
| Ashton, Dorothy L. A.B. (Bryn Mawr) | Swarthmore | (502 Cedar Lane) |
| Askey, Edwin Vincent B.S. (Allegheny) | Meadville | Hamilton Court |
| Barney, Azel P. A.B. (Pennsylvania) | Thompsonville, Conn. | do. |
| Beardwood, Joseph Thomas, Jr. A.B. (Pennsylvania) | Elkins Park | [Park Ave.] |
| Bender, Frank Caspar | Minersville | Dorm. 312 Leidy |
| Bostwick, Delazon Swift | Ardmore | [Ardmore] |
| Bothe, Frederick Augustus B.S. (Michigan) | Camden, N. J. | [2916 Cramer St.] |
| Bronstein, Jake Hannack | Memphis, Tenn. | 3739 Locust St. |
| Brown, Velva V. B.S. (Ottawa) | Oakland, Calif. | 4055 Sansom St. |
| Catlin, William Granville A.B. (St. Johns) | White Haven, Md. | 119 S. 39th St. |
| Chadman, Michael Gregory B.S. (Pennsylvania State) | Lancaster | 5037 Catharine St. |
| Cobb, Donnell Borden B.S. (North Carolina) | Goldsboro, N. C. | 3609 Locust St. |
| Cohen, Milten Henry | York | 206 S. 36th St. |
| Conlan, Francis Joseph | Pittston | 3611 Locust St. |
| Cooper, David Alexander B.S. (North Carolina) | Henderson, N. C. | 3416 Powelton Ave. |
| Cotner, Jacob Gonsar | Sunbury | 3409 Walnut St. |
| Darden, Douglas Beaman A.B. (North Carolina) | Wilson, N. C. | 3611 Locust St. |

| NAME. | RESIDENCE. | CITY ADDRESS. |
|---|----------------------------|-------------------------|
| Davis, Morris A.B. (Missouri) | New York, N. Y. | 3929 Pine St. |
| Deitchman, Louis Samuels A.B. (Missouri) | Youngstown, Ohio | 310 S. 40th St. |
| Dench, Edward Hazlitt | Erie | 3444 Chestnut St. |
| Downs, Thomas McKean | Ambler | [Ambler] |
| Drieling, Arthur William B.S. (Pennsylvania State) | McKeesport | 3610 Walnut St. |
| Dunkelberger, LeRoy | Kutztown | 3429 Walnut St. |
| Ehmann, Frederick Harry | Philadelphia | 5039 Market St. |
| Enfield, Thomas Walter | Bedford | 3440 Walnut St. |
| Fay, Temple Sedgwick B.S. (Washington) | Seattle, Wash. | 3601 Locust St. |
| Fitz Hugh, Thomas, Jr. A.M. (Virginia) | University, Va. | 3637 Locust St. |
| Folsom, Theodore Winslow | Florence, Ala. | 3416 Powelton Ave. |
| Foot, Lois | Des Moines, Iowa | 811 St. Bernard St. |
| Freas, Howard Malcolm A.B. (Colgate) | Trenton, N. J. | Dorm. 30 Memorial Tower |
| Gamon, Robert Speer A.B. (Maryville) | Knoxville, Tenn. | 3610 Walnut St. |
| Gilmore, Hugh Richmond, Jr. | Emlenton | do. |
| Gonzalez, Abelardo | Merida, Yucatan, Mexico | 3712 Locust St. |
| Greenleaf, Arthur Johnson B.S. (Bucknell) | Quarryville | Dorm. 127 Class of '87 |
| Guilder, Ruth Pierce | Darling | 4207 Sansom St. |
| Harberg, Sidney | Philadelphia | 3720 N. 19th St. |
| Harer, William Benson | Williamsport | 3801 Spruce St. |
| Hargis, Estes Henry | Birmingham, Ala. | 210 S. 36th St. |
| Harney, James Norman | Plymouth, N. C. | 3611 Locust St. |
| Hawkey, Vincent Grant | Tidioute | Dorm. 427 Baldwin |
| Hayman, Joseph Marchant, Jr. A.B. (Haverford) | Philadelphia | 3539 Locust St. |
| Hernandez, Manuel | San Juan, Porto Rico | 3725 Spruce St. |
| Herrington, Willet Jeremiah | Bad Axe, Mich. | Dorm. 427 Baldwin |
| Holtzhauser, Ralph Stephen | Philadelphia | 2300 E. York St. |
| Hornberger, Jennings Howard B.S. (Bucknell) | Milton | Dorm. 414 Franklin |
| Houser, Karl M. Ph.B. (Franklin and Marshall) | Pennsylvania Furnace | 3539 Locust St. |
| Hunter, Harry Grimmett A.B. (North Carolina) | Hendersonville, N. C. | 3416 Powelton Ave. |
| James, William Lloyd | Pittsburgh | 3610 Walnut St. |
| Jones, Roycroft Clifton | Philadelphia | 4304 N. 15th St. |
| Jones, William Rhys | Scranton | Dorm. 405 Brooks |
| Keeler, Harold Randembush Ph.B. (Lafayette) | Harleysville | Dorm. 26 Graduate |
| Kennedy, Andrew Aloysius | Hazleton | 2343 Chestnut St. |
| King, Clair Boyd B.S. (Grove City) | Grove City | 3610 Walnut St. |
| Kirk, William W. A.B. (North Carolina) | Jacksonville, Fla. | 3611 Locust St. |
| Kirksey, James Jackson B.S. (North Carolina) | Morganton, N. C. | 3616 Powelton Ave. |
| Kline, Max Otto B.S. (Texas) | Dayton, Tex. | 310 S. 40th St. |
| Kneisley, Bender Balthis A.B. (Roanoke) | Strasburg, Va. | 3440 Walnut St. |
| Knight, Francis Patrick | Scranton | 3601 Locust St. |

| NAME. | RESIDENCE. | CITY ADDRESS. |
|---|--------------------|--|
| Krum, Charles Peter B.S. (Albright) | Weissport | 3607 Locust St. |
| Lowrie, William Lyon, Jr. B.S. (Princeton) | Tyrone | 3440 Walnut St. |
| Luke, Odeen B.S. (Utah) | Marysvale, Utah | 3445 Chestnut St. |
| McCabe, James Leo | Shenandoah | 3607 Locust St. |
| Margolies, Alexander B.S. (Pennsylvania) | Philadelphia | 2229 N. 33d St. |
| Marsden, Wilson Conrad | West Pittston | 202 S. 36th St. |
| Mengel, John Geist B.S. (Albright) | Trevorton | 3607 Locust St. |
| Mengel, Willard Geist B.S. (Albright) | do. | do. |
| Miller, Ford Andrew Ph.B. (Lafayette) | Easton | Dorm. 26 Graduate |
| Murray, John Milne B.S. (Dartmouth) | Concord, N. H. | 223 S. 36th St. |
| Myers, Fred Earl | Apollo | 3601 Locust St. |
| Nowell, Stephen Cannon, Jr. B.S. (North Carolina) | Winfall, N. C. | 3609 Locust St. |
| Nyemetz, Ferdinand William A.B. (Pennsylvania) | Chester | [805 Barclay St.] |
| Oglesby, Samuel Earl A.B. (Washington and Lee) | Lynchburg, Va. | 1249 S. 53d St. |
| Park, Samuel Nelson | Franklin | 3641 Locust St. |
| Patton, Edwin Fritz A.B. (Colorado) | Boulder, Col. | 3529 Locust St. |
| Perry, Robert Edward | Mt. Olive, N. C. | 3609 Locust St. |
| Persky, Abram H. | Philadelphia | 1930 N. 32d St. |
| Prather, John William A.B. (Transylvania) | State Line, Ky. | 3716 Locust St. |
| Prescott, Frederick Arthur B.S. (Ohio Northern) | Elizabeth | 3719 Locust St. |
| Pyle, Wellden | Jersey City, N. J. | Dorm. 117 McKean |
| Rambo, Victor Clough | Baker, Ore. | 3607 Baring St. |
| Reese, Monroe David | Ashland | 3801 Spruce St. |
| Renie, Robert Oswald | Arapahoe, Neb. | Dorm. 34 Graduate |
| Rhoden, Beulah Richard Harold A.B. (Nebraska) | Lincoln, Neb. | "L 12," The Pasadena, 3800 Spruce St. |
| Ritchie, John Columbkille, Jr. | Wilkes-Barre | Dorm. 128 Class of '87 |
| Rittenberg, Benjamin Bernard | Philadelphia | 4135 Westminster Ave. |
| Robbins, Fred Ross B.S. (North Carolina) | Lenoir, N. C. | 3611 Locust St. |
| Rogers, Vernon Stover A.B. (Iowa State) | El Paso, Tex. | 3459 Walnut St. |
| Rohwer, Christian Jacob B.S. (University of Washington) | Spangle, Wash. | 3716 Locust St. |
| Rose, Edward, Jr. | Chattanooga, Tenn. | Dorm. 128 Class of '87 |
| Rothfuss, Edgar Lloyd A.B. (Gettysburg) | Montoursville | 3440 Walnut St. |
| Rothman, Maurice Maxwell | Philadelphia | 5915 Christian St. |
| Rubinstein, Hyman A.B. (Missouri) | Brooklyn, N. Y. | 3929 Pine St. |
| Ruggeri, Charles, Jr. A.B. (Utah) | Helper, Utah | 12 S. 34th St. |
| Rush, Hubert Lowry B.S. (Mississippi) | Meridian, Miss. | 4510 Osage Ave. |

| NAME. | RESIDENCE. | CITY ADDRESS. |
|--|----------------------------|------------------------------------|
| Sabol, John Gregory A.B. (Grove City) | McKeesport | Dorm. 322 Leidy |
| Sands, Joseph Evans A.B. (Swarthmore) | Yardley | 3601 Locust St. |
| Schaffer, Howard William B.S. (Pennsylvania) | Philadelphia | 5151 Walnut St. |
| Shackleford, Walter Lawson B.S. (Mississippi) | Meridian, Miss. | 4510 Osage Ave. |
| Shajovitz, Harry | Philadelphia | 304 Poplar St. |
| Smith, Anderson Jones B.S. (Guilford) | Black Creek, N. C. | 3717 Spruce St. |
| Snyder, Norman Earl Spaulding, Olive Gertrude A.B. (South Dakota) | Lancaster Armour, S. D. | 3409 Walnut St. Sergeant Hall |
| Stolze, Joseph Ariel A.B. (Wisconsin) | Wausau, Wis. | 4242 Spruce St. |
| Sullivan, Denis Timothy Joseph B.S. (Dartmouth) | Concord, N. H. | 223 S. 36th St. |
| Sullivan, Jeremiah Jennings B.S. (Pennsylvania State) | Lancaster | 3610 Walnut St. |
| Sweeney, John Augustin Sweeney, Joseph Russell B.S. (Pennsylvania State) | Philadelphia Tamaqua | 3611 Locust St. 3615 Locust St. |
| Taggart, George William | Philadelphia | 5905 Cedar Ave. |
| Taylor, Shahane R. B.S. (North Carolina) | Kinston, N. C. | 3609 Locust St. |
| Thorp, Adam T. A.B. (North Carolina) | Rocky Mount, N. C. | do. |
| Tillotson, Rulon Squires A.B. (Utah) | Ogden, Utah | 12 S. 34th St. |
| Tinsman, James Herbert A.B. (Pennsylvania) | Philadelphia | 1210 Harrison St. |
| Van Meter, Virginia Cunningham | Denver, Col. | 6 S. Farragut St. |
| Wannamaker, Edward Jones A.B. (Wofford) | Orangeburg, S. C. | 3906 Spruce St. |
| Weinstein, Philip | Jacksonville, Fla. | Dorm. 316 Leidy |
| West, Lyle Battey | Chattanooga, Tenn. | Dorm. 117 McKean |
| Whelan, Anna B.S. (Wisconsin) | Mondovi, Wis. | 811 St. Bernard St. |
| Wilcox, Frederic Putman, Jr. | Philadelphia | 2031 Diamond St. |
| Woodward, King Grier B.S. (Wisconsin) | Peoria, Ill. | 4109 Pine St. |
| Worthington, Dorothy A.B. (Wellesley) | Philadelphia | 4207 Sansom St. |
| Wu, Hsing-Yeh | Peking, China | 3613 Locust St. |

SECOND-YEAR CLASS.

| | | |
|---|----------------------|--------------------|
| Allen, Arthur W. | Hazleton | 3601 Locust St. |
| Amadeo, Jose Antonio | San Juan, Porto Rico | 3726 Locust St. |
| Ammarell, John Samuel | West Leesport | 3607 Locust St. |
| Appleyard, Joseph | Beaverdale | do. |
| Bacon, John Free | York | Dorm. 111 Franklin |
| Bantley, David Straub | Scalp Level | 3440 Walnut St. |
| Bell, Edwin Massie A.B. (Washington and Lee) | Lewisburg, W. Va. | Dorm. 404 Brooks |
| Bellville, Robert Chambers, 3d | Trenton, N. J. | 3641 Locust St. |

| NAME. | RESIDENCE. | CITY ADDRESS. |
|---|---------------------|------------------------|
| Bloom, Colonel Hugh | Ogontz | 3610 Walnut St. |
| Boland, Stanley Walter | Dunmore | 4061 Spring Garden St. |
| Book, J. Edward | Harrisburg | 3224 Lancaster Ave. |
| Brady, Raymond John | Newark, N. J. | 3607 Locust St. |
| Brewer, Earl Lane A.B. (Pennsylvania) | Philadelphia | 413 Locum Ave. |
| Bryce, David Andrew | Pittsburgh | 4921 Cedar Ave. |
| Buckman, Lewis Taylor B.S. (Massachusetts Agricultural) | Wilkes-Barre | Dorm. 445 Lippincott |
| Burket, D. Gordon | Altoona | 3610 Walnut St. |
| Caplan, Isador | Fall River, Mass. | 3046 Oxford St. |
| Cardone, John Battista | Millburn, N. J. | Dorm. 111 Franklin |
| Charnock, Maurice P. | Butler | Dorm. 24 Graduate |
| Chianese, Cesare Chester | Trenton, N. J. | 4315 Larchwood Ave. |
| Chung, Elbert Yit | Los Angeles, Calif. | 3645 Locust St. |
| Coates, Frank Fulton | Coatesville | 4211 Chestnut St. |
| Cook, Edward Joseph | Shenandoah | 8 S. 36th St. |
| Cottrell, James Ewing | Knoxville, Tenn. | Dorm. 425 McKean |
| Crandell, Roy Wendell | Williamsport | 3440 Walnut St. |
| Crosland, Edward Samuel, Jr. | Lititz | Dorm. 429 Class of '87 |
| Edgar, Malcolm Shepherd A.B. (Princeton) | Jamesburg, N. J. | 3601 Locust St. |
| Francis, Reginald Keifer | Waynesboro | 3440 Walnut St. |
| Freeland, Edward McKenzie A.B. (Pennsylvania) | Elkins Park | Dorm. 411 Leidy |
| Goldstein, Leopold | Camden, N. J. | [1425 Broadway] |
| Gouley, Benjamin Alexis | Philadelphia | 2634 Kensington Ave. |
| Greenwald, Joseph | do. | 1223 Snyder Ave. |
| Herring, James B. | Ottawa, Ill. | 3909 Spruce St. |
| Hirsh, Joseph Emmet B.S. (Alabama) | Birmingham, Ala. | Dorm. 328 Franklin |
| Jefferies, Marjorie Sharps A.B. (Bryn Mawr) | Narberth | [111 Narberth Ave.] |
| Keller, Charles Ritner | Bloomsburg | 3601 Locust St. |
| Kelly, Gerald Aloysius | Jessup | 3607 Locust St. |
| Kenney, Joseph Sylvester | Scranton | 3733 Spruce St. |
| King, Luther John | Fulda, Minn. | 246 S. 39th St. |
| Kistler, Clark Suger | Allentown | Dorm. 216 Foerderer |
| Klemmer, Roland Nickalous A.B. (Franklin and Marshall) | New Holland | Dorm. 433 Class of '87 |
| Klussman, Richard Mansfield | Toledo, Ohio | 3610 Walnut St. |
| Kopeika, Moses | Philadelphia | 3447 Walnut St. |
| Kressley, Clairmont Arthur A.B. (Franklin and Marshall) | Allentown | 4725 Hazel Ave. |
| Kuettel, William Joseph | Philadelphia | 2840 Stiles St. |
| Leaman, William Gilmore, Jr. | do. | 3700 Baring St. |
| Levy, Anna Lillian | Scranton | 4532 Regent St. |
| Lockwood, Vernon Arthur | Harpersville, N. Y. | 2033 Walnut St. |
| Loffredo, Louis A.B. (Pennsylvania) | East Hampton, Conn. | 3703 Locust St. |
| Loudenslager, Paul Edward A.B. (Gettysburg) | Harrisburg | 3601 Locust St. |
| McCloskey, Bernard J. | Johnstown | Dorm. 314 Leidy |
| Mallard, James Jefferson A.B. (Southwestern) | Jacksonville, Tex. | Dorm. 361 Baird |
| Marshall, William R. | Aspinwall | Dorm. 228 Class of '87 |
| Mosser, William Blair | Huntingdon | Dorm. 361 Baird |
| O'Brien, Lenore Rice | Harrisburg | 3322 Walnut St. |

| NAME. | RESIDENCE. | CITY ADDRESS. |
|----------------------------|---------------------|------------------------|
| Ohlson, Albin Victor | Kane | 3719 Locust St. |
| Otterbein, Ralph Frederic | Port Carbon | 3615 Locust St. |
| Price, Robert Barber | Charleston, W. Va. | Dorm. 332 Franklin |
| Prieto, Ezequiel | Philadelphia | 3928 Pine St. |
| Ramonat, Harold Eugene | Shenandoah | Dorm. 212 Franklin |
| Reese, George Grant | do. | 3624 Chestnut St. |
| Robinson, William Henry | Greensburg | Dorm. 228 Class of '87 |
| Ruche, Harry Charles | Philadelphia | 2320 Columbia Ave. |
| Russell, Roy Dean | Great Bend, Kan. | 3909 Spruce St. |
| A.B. (Kansas) | | |
| Samaniego, Arturo Valentin | Los Angeles, Calif. | 3729 Locust St. |
| Schumann, Max | Philadelphia | 316 N. Marshall St. |
| Seitzick, Hannah Elizabeth | Millville, N. J. | Sergeant Hall |
| Siemion, Theophilus Roch | Philadelphia | 2982 Richmond St. |
| Slifkin, David Jacob | Bluefield, W. Va. | 3739 Locust St. |
| Smith, Jay Donald | Harrisburg | Dorm. 24 Graduate |
| Smith, William B. | Catasauqua | 3610 Walnut St. |
| Straub, Elmer Levi, Jr. | Minersville | 210 S. 36th St. |
| A.B. (Pennsylvania) | | |
| Swanson, Cleary Neil | Marinette, Wis. | 112 S. 43d St. |
| A.B. (Wisconsin) | | |
| Thomas, Atha | Brownsville, Tenn. | 3716 Locust St. |
| Thomas, Jessie Eliza | Huron, S. D. | 4328 Sansom St. |
| A.B. (Smith) | | |
| Thompson, Malcolm Drake | Mt. Sterling, Ky. | 3601 Locust St. |
| Thompson, Raymond Jack | Butler | do. |
| Voorhees, Earle W. | Poughkeepsie, N. Y. | Dorm. 325 Franklin |
| Wagoner, George W. Jr. | Johnstown | 3641 Locust St. |
| Weiner, Joseph Gaillard | Philadelphia | 1024 N. 2d St. |
| Weissman, Marcus Irwin | do. | 1026 N. 2d St. |
| White, Thomas Preston | Lexington, Va. | 3610 Walnut St. |
| Wilson, Raymond Newton | Kittanning | do. |
| Winn, Samuel Lawrence | Chester | 3739 Locust St. |
| Wood, Edward N. | Pittsburgh | Dorm. 234 Baird |
| Zobel, Arthur Cuno Frank | Johnstown | Dorm. 234 Baird |

FIRST-YEAR CLASS.

| | | |
|--------------------------|----------------------|---------------------|
| Apellaniz, Jose | San Juan, Porto Rico | 219 S. 33d St. |
| B.S. (Porto Rico) | | |
| Atlee, Edward Dillingham | Philadelphia | 2039 Pine St. |
| Bachman, Carl Edwin | Reading | 3702 Locust St. |
| A.B. (Pennsylvania) | | |
| Barba, Philip Stanley | Philadelphia | 3107 W. Coulter St. |
| B.S. (Princeton) | | |
| Barnwell, John Blair | New York, N. Y. | 3637 Locust St. |
| A.B. (Trinity, Conn.) | | |
| Barrett, Harold Gates | Scranton | 3602 Walnut St. |
| *Beers, James Rockwood | Weatherly | 3440 Walnut St. |
| Benson, Matthew Martin | Cohoes, N. Y. | Dorm. 205 Leidy |
| B.S. (Pennsylvania) | | |
| Boyer, John F. | Allentown | 3607 Locust St. |
| Bush, Ralph Kenneth | Manasquan, N. J. | 5442 Trinity Place |
| Cadman, Robert Blakemore | Hastings | 3455 Walnut St. |
| B.S. (Pennsylvania) | | |
| Cardona, Juan Primo | Ponce, Porto Rico | 3449 Woodland Ave. |
| Cianfrani, Theodore | Philadelphia | 1217 Morris St. |
| Cohen, Louis | do. | 5734 Pine St. |

* Withdrawn.

| NAME. | RESIDENCE. | CITY ADDRESS. |
|---|--------------------|---------------------------------------|
| Collings, Ruth Mary A.B. (Pomona) | Philadelphia | 3707 Walnut St. |
| Cope, Arthur Alexander A.B. (Lafayette) | Hamburg | 1421 Arch St. |
| *Cowell, Edward Huntington | Athens | 3603 Locust St. |
| Croll, John, Jr. B.S. (Gettysburg) | Middletown | 3274 Chancellor St. |
| Crowley, Joseph Wright | Haddonfield, N. J. | [58 Euclid Ave.] |
| Cummings, Clarence Wright A.B. (Westminster) | East Brook | 3429 Walnut St. |
| Curtis, Laurence A.B. (Yale) | Derby, Conn. | [54 W. Greenwood Ave., Lansdowne] |
| D.D.S. (Pennsylvania) | | |
| Darby, Hawthorne A.B. (De Pauw) | Colfax, Ind. | 120 S. 34th St. |
| Debayle, Enrique | Leon, Nicaragua | 232 S. 38th St. |
| Dodge, Francis William | Rosiere, N. Y. | Phipps Institute |
| Drake, Alonzo Henry Boyer | Philadelphia | 2762 Pratt St. |
| Dunbar, David McCarrell A.B. (Washington and Jefferson) | Burgettstown | 3717 Locust St. |
| Eichhorn, Oscar Julius A.B. (Dickinson) | Lonoconing, Md. | 3607 Locust St. |
| Elfman, Louis Kenneth | Philadelphia | 617 S. Conestoga St. |
| Ellson, John Vernon, Jr. | do. | 2715 N. Park Ave. |
| Elterich, Theodore Ottmar A.B. (Washington and Jefferson) | Pittsburgh | 3232 Chestnut St. |
| Ermann, Hortense B.S. (Pennsylvania) | Philadelphia | 1955 N. 19th St. |
| Euster, Alfred Abraham | Camden, N. J. | [701 Broadway] |
| Ferguson, Lewis Kraeer A.B. (Westminster) | Washington | 3223 Sansom St. |
| Firestone, Henry Allen | McKeesport | 206 S. 36th St. |
| Fowle, Lester Perham | Danville | 4035 Locust St. |
| Freas, Ella Margaret A.B. (Mount Holyoke) | Trenton, N. J. | 4341 Baltimore Ave. |
| Gallagher, John Wesley, Jr. | Paulsboro, N. J. | 340 S. 15th St. |
| Gash, Isadore William | Philadelphia | 3123 Dakota St. |
| Gillespie, Franklin Simcox | Swarthmore | [45 Amherst St.] |
| Glauser, Frank | Philadelphia | 2050 Germantown Ave. |
| Goldberg, Samuel Joseph | do. | 5759 Pine St. |
| Hanner, George William | Milton | 2105 N. 11th St. |
| Harris, Stanley Edwards A.B. (Princeton) | Philadelphia | 218 S. Farragut Terrace |
| Heberling, John Atherton B.S. (Bucknell) | Chester | [1249 Maple Lane, Buckman Village] |
| *Heckel, Frank Price | Philadelphia | 200 S. 42d St. |
| *Henderson, Alan Blayney B.S. (Westminster) | New Wilmington | 3429 Walnut St. |
| Henderson, Jonathan Kearsley | Philipsburg | 3641 Locust St. |
| Hertzog, Solis Cohen Bogh | Oley | 3429 Walnut St. |
| Hicks, Harvard Raymond | Spokane, Wash. | 3706 Locust St. |
| Hirata, Mitsuo Suburo | Miyekeu, Japan | 3420 Sansom St. |
| Jacobs, Maurice Spencer | Philadelphia | 1402 S. 7th St. |
| Kaufman, Albert Ross B.S. (Washington and Jefferson) | New Kensington | 3717 Locust St. |

| NAME. | RESIDENCE. | CITY ADDRESS. |
|-------------------------------|----------------------------|---------------------|
| Killen, Charles MacNeal, Jr. | Philadelphia | 4511 Pine St. |
| Knott, Mary Frank | do. | 204 S. 36th St. |
| Kuhn, Kenneth Stewart | Easton | 3440 Walnut St. |
| Laub, Irene Frances | Bath | 120 S. 34th St. |
| Lepperd, Floyd Charles | Duncannon | 114 S. 45th St. |
| A.B. (Dickinson) | | |
| Lintzmeyer, Emil Alfred | Philadelphia | 6130 Morton St. |
| *Livingstone, Jess Swanton | Spokane, Wash. | 3269 Woodland Ave. |
| Long, Charles-Francis | Wilkes-Barre | 6429 Drexel Road |
| A.B. (Haverford) | | |
| Lowry, John Edward | Flushing, N. Y. | 4101 Chestnut St. |
| Lynch, Ralph | Greensburg | The Normandie |
| B.S. (Dartmouth) | | |
| McCarty, Arthur Clayton | Louisville, Ky. | Dorm. 344 McKean |
| A.B. (Pennsylvania) | | |
| McNeill, Claudius Winfield | Wadesboro, N. C. | 1348 S. Markoe St. |
| A.B. (Lincoln) | | |
| McShane, James Kane | Philadelphia | 1528 N. 15th St. |
| McVeigh, Charles Johnson | do. | 3424 Disston St. |
| Derland | | |
| Ph.B. (Lafayette) | | |
| Mehring, Percy Leroy | Taneytown, Md. | 3455 Walnut St. |
| A.B. (Gettysburg) | | |
| Meyers, Solomon Benjamin | Philadelphia | 444 S. 62d St. |
| *Moore, Harold Robert | Houston, Tex. | 223 S. 36th St. |
| A.B. (Texas) | | |
| Moore, Raymond Burton | Wilmington, Del. | Dorm. 436 Baird |
| Morrison, William Henry, Jr. | Philadelphia | 8021 Frankford Ave. |
| Moss, Ralph Vernon | do. | 1643 Wakeling St. |
| *Moyer, Ransom Cleveland | Pennsdale | 3717 Spruce St. |
| Muendel, Edward August | West Hoboken, N. J. | 3438 Walnut St. |
| Nelson, Harry | Salem, N. J. | 3720 Locust St. |
| Norton, Manville William | New Albany | 3945 Baltimore Ave. |
| *Nuelsen, Henry Erwin | Zurich, Switzerland | 232 S. 38th St. |
| Oast, Fred Funsten | Portsmouth, Va. | Dorm. 30 Morgan |
| Oyler, Ralph Ziegler | Gettysburg | 3601 Locust St. |
| B.S. (Gettysburg) | | |
| Palomeque, Emilio Jose | Merida, Yucatan, Mexico | 6200 Christian St. |
| Peter, Alexander Monroe | Slatington | 4035 Locust St. |
| Pigossi, Dante | Greenock | 3902 Baltimore Ave. |
| B.S. (Ohio Northern) | | |
| Porter, Roland DeLance | Athens | 3440 Walnut St. |
| Pugliese, Francis Michael | Pittston | 3457 Walnut St. |
| Ramirez, Ramon Eladio | Mayaguez, Porto Rico | 3413 Walnut St. |
| Regelman, William Harry | Emporium | 3914 Spruce St. |
| Robin, Nathaniel Halpern | Pittsburgh | 3915 Pine St. |
| Rowe, Charles Gordon | Philadelphia | 1332 N. 11th St. |
| Royer, Neta Ruth | Huntingdon | 400 S. 40th St. |
| A.B. (Juniata) | | |
| Sanders, Miller Abram | Blountville, Tenn. | 4041 Locust St. |
| A.B. (Hampden Sidney) | | |
| Schaadt, Thomas Evan | Allentown | 210 S. 36th St. |
| Scheer, George Alexander, Jr. | Philadelphia | 2404 N. 6th St. |
| Schenck, Harvey Paul | do. | 5335 Locust St. |
| B.S. (Haverford) | | |
| Schmidt, William Aloysius | Shenandoah | Dorm. 212 Franklin |

* Withdrawn.

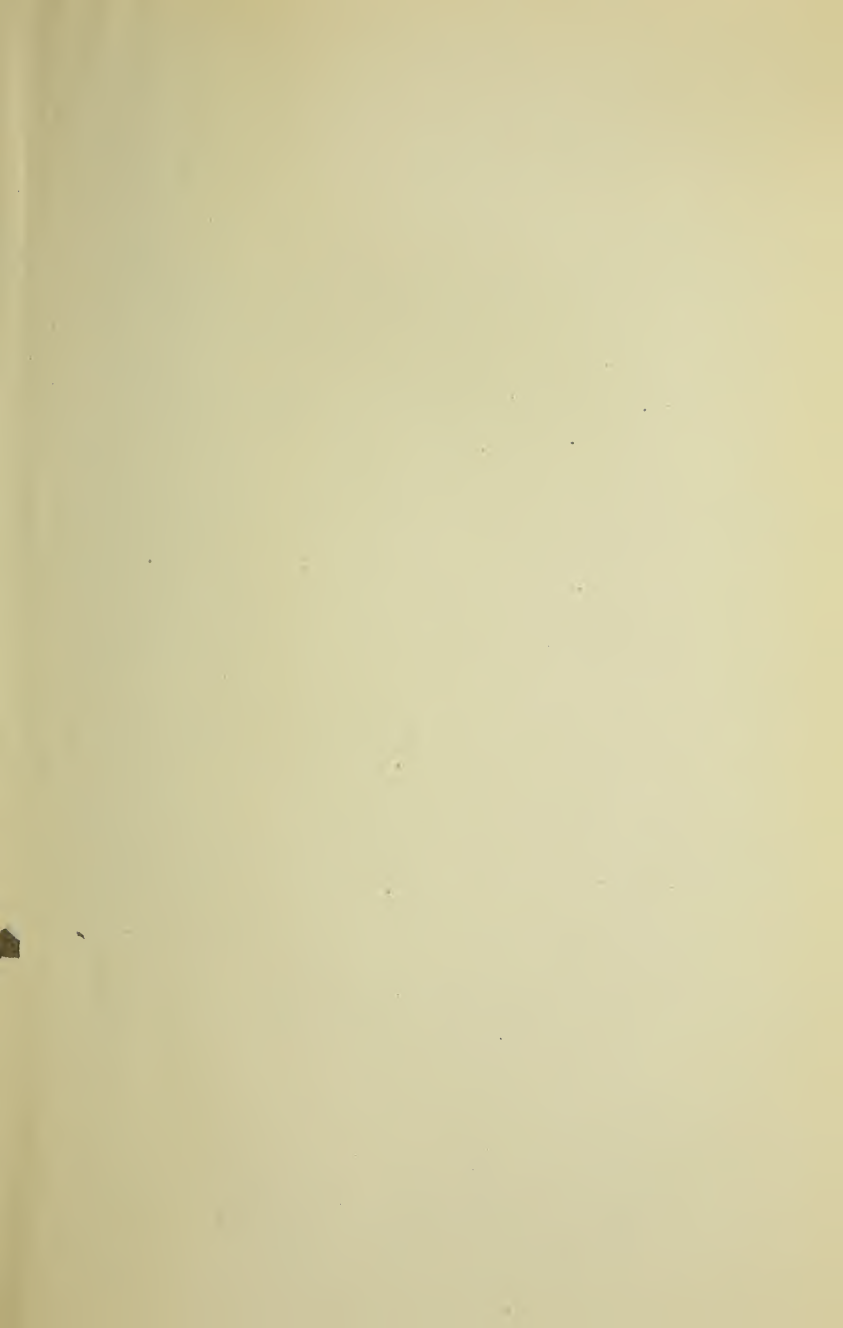
| NAME. | RESIDENCE. | CITY ADDRESS. |
|------------------------------|---------------------|------------------------|
| Shaub, Paul Daniel | New Freedom | 3457 Walnut St. |
| Shelley, Elmer Graybill | Richfield | do. |
| Shewell, William Irvin | Philadelphia | 1732 Spruce St. |
| Sprenkel, Edward Eyster | York | 3705 Walnut St. |
| Stillman, Eugene Hitch | Philadelphia | 5921 Lansdowne Ave. |
| Summerill, Garnett | Penn's Grove, N. J. | Dorm. 374 Hopkinson |
| B.S. (Rutgers) | | |
| Sunderman, Frederick William | Juniata | 3440 Walnut St. |
| B.S. (Gettysburg) | | |
| Thayer, Robert W. | Trinity, N. C. | 3904 Walnut St. |
| Thompson, Howard Calvin | Altoona | 3407 Walnut St. |
| Thorpe, Edward S., Jr. | Haverford | [417 Lancaster Ave.] |
| B.S. (Haverford) | | |
| Turchi, John D. | Philadelphia | 1169 S. 10th St. |
| Vastine, Douglas Hursh | Catawissa | Dorm. 354 Class of '87 |
| Vastine, Jacob Hursh | do. | 3436 Walnut St. |
| Ward, Elizabeth | Camden, N. J. | [553 Washington St.] |
| Weiss, Charles | New York, N. Y. | 1632 S. 56th St. |
| Ph.D. (Pennsylvania) | | |
| Whitehill, James Lorrin | Hookstown | 3944 Pine St. |
| B.S. (Grove City) | | |
| Williams, John Conrad | Philadelphia | 154 Mayland St. |
| Witherow, Lester Stuart | Taneytown, Md. | 16 S. 37th St. |
| B.S. (Gettysburg) | | |
| Zucker, Abram Meyer | Canonsburg | 3739 Locust St. |
| Zulick, Thomas Cummings, Jr. | Easton | 3807 Spruce St. |
| Ph.B. (Lafayette) | | |

SPECIAL STUDENTS.

| | | |
|---------------------|---------------------|--------------------|
| Colon, Rafael | Arecibo, Porto Rico | St. Agnes Hospital |
| Pretz, John Edgar | Easton | |
| A.M. (Lafayette) | | |
| M.D. (Pennsylvania) | | |

SUMMARY.

| | |
|--|-----|
| Students of the Fourth Year Class..... | 132 |
| Students of the Third Year Class..... | 122 |
| Students of the Second Year Class..... | 86 |
| Students of the First Year Class..... | 114 |
| Special Students..... | 2 |
| Total..... | 456 |



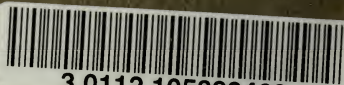
MEDICAL CALENDAR FOR 1920-1921.

1920.

- July 1, Thursday.....Applications for Admission should be presented on or before this date.
- July 15, Thursday.....Notifications of acceptance or non-acceptance for Enrolment sent out.
- Sept. 13, Monday.....Competitive Examinations for Medical Scholarships begin: 10 A. M.
- Sept. 13, Monday.....Re-Examinations begin: 2 P. M.
- Sept. 24, Friday.....Session begins.
- Nov. 24, Wednesday.....Thanksgiving Recess begins: 6 P. M.
- Nov. 29, Monday.....Thanksgiving Recess ends: 9 A. M.
- Dec. 23, Thursday.....Christmas Recess begins: 6 P. M.

1921.

- Jan. 3, Monday.....Christmas Recess ends: 9 A. M.
- Jan. 24, Monday.....Mid-Year Examinations begin: 9 A. M.
- Feb. 22, Tuesday.....University Day: Recess.
- Mar. 24, Thursday.....Easter Recess begins: 6 P. M.
- Mar. 29, Tuesday.....Easter Recess ends: 9 A. M.
- May 2, Monday.....Last day for receipt of Prize Essays and Reports.
- May 23, Monday.....Final Examinations, Fourth-Year Class, begin.
- May 30, Monday.....Final Examinations, other Classes, begin.
- June 15, Wednesday.....Commencement.



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